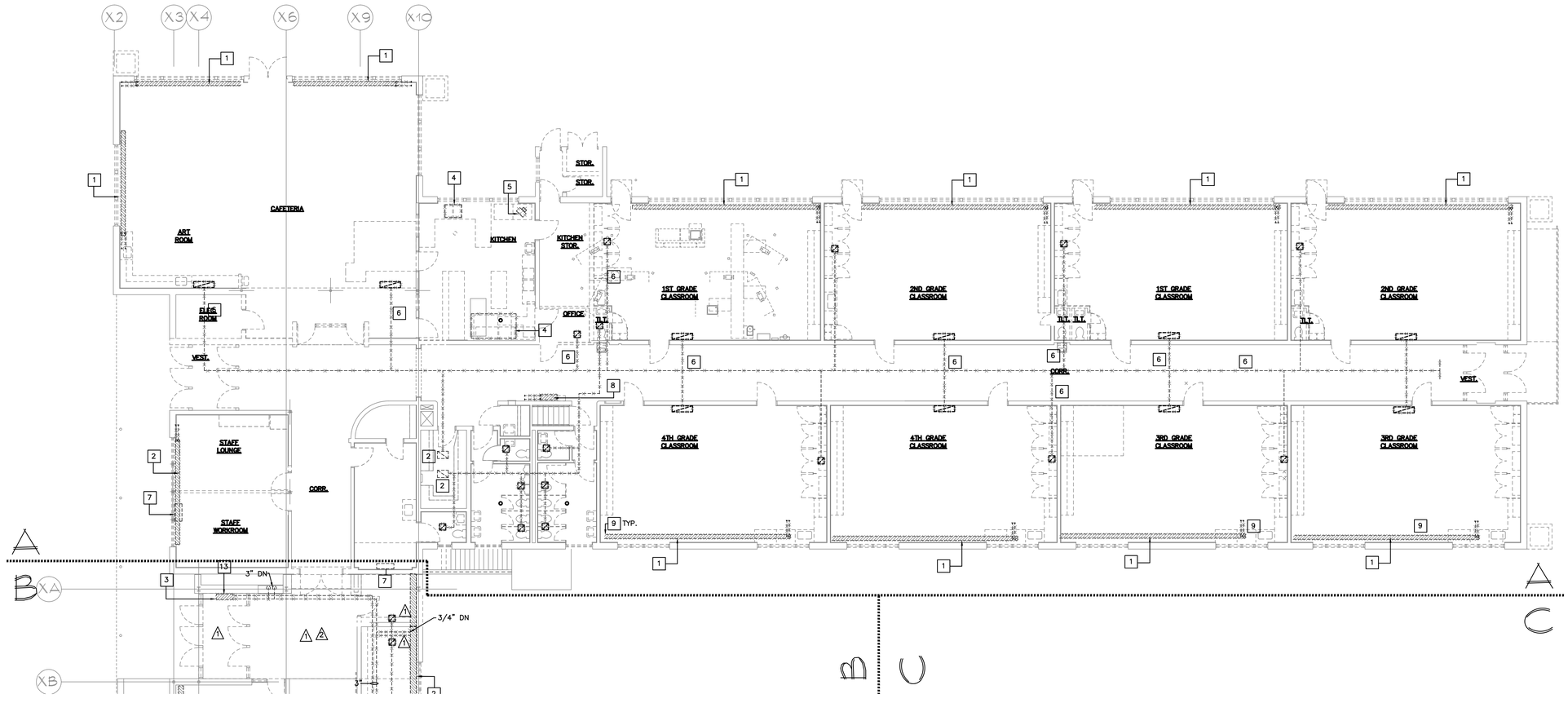


PHASING NOTES

1. PIPING INSUALTION IS BEING ABATED AS PART OF PHASE CONTRACTOR SHALL REINULSATE ALL EXISTING PIPING WHICH HAS HAD INSULATION REMOVED AS PART OF ABATEMENT. PIPING SHALL INCLUDE STUBUPS AND BRANCHES TO INDIVIDUAL PIECES OF EQUIPMENT. PIPE SIZES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ACTUAL SIZES IN FIELD.

DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING PIPING OR EQUIPMENT TO BE REMOVED
-x-x-x-	EXISTING PIPING, DUCTWORK OR EQUIPMENT TO BE REMOVED
	EXISTING GRILLE TO BE REMOVED
	EXISTING REGISTER/ DIFFUSER TO BE REMOVED

GENERAL NOTES

1. THE INTENT OF THIS DOCUMENT IS FOR THE CONTRACTOR TO REMOVE ALL EXISTING MECHANICAL EQUIPMENT, FINNED TUBE RADIATION, CONVECTOR, HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED INSULATION AND HANGERS, HOT WATER PIPING, DUCTWORK AND CONTROLS.
2. CONSTRUCTION WILL BE COMPLETED IN MULTIPLE PHASES. REVIEW AND COORDINATE WITH THE GENERAL CONTRACTOR'S APPROVED SEQUENCING PLAN.
3. THE DEMOLITION NOTES ARE FOR DESCRIPTIVE GUIDE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL ITEMS WHETHER OR NOT INDICATED AND/ OR NOTED ON THE DRAWINGS. LOCATIONS AND QUANTITIES SHOWN ON THE DEMOLITION DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE FULL EXTENT OF WORK.
4. ALL WASTE MATERIALS AND EQUIPMENT SHALL BE REMOVED FROM SITE AND SHALL BE LEGALLY DISPOSED BY THE CONTRACTOR.
5. NO WORK SHALL BE LEFT INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
6. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND PIPING SYSTEM, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON.
7. COORDINATE SHUTDOWN OF EXISTING SERVICES AND TAPPING OF EXISTING PIPING WITH OWNER'S MAINTENANCE PERSONNEL. NO WORK SHALL TAKE PLACE UNTIL DOING SO.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL TRADES.
9. ENSURE THAT POWER IS SECURED OFF PRIOR TO COMMENCING EQUIPMENT REMOVAL. SECURE POWER BACK TO PANEL FOR EQUIPMENT BEING REMOVED.
10. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

DEMOLITION NOTES

1. DISCONNECT, REMOVE AND DISPOSE OF EXISTING FIN-TUBE RADIATION ELEMENT SUPPORT AND ENCLOSURE, HOT WATER SUPPLY AND RETURN PIPING, HYDRONIC SPECIALTIES AND CONTROLS.
2. DISCONNECT, REMOVE AND DISPOSE OF EXISTING ROOF MOUNTED EXHAUST FANS, ASSOCIATED DUCTWORK AND CONTROLS. COORDINATE PATCHING AND REPAIRING OF OPENING.
3. DISCONNECT, REMOVE AND DISPOSE OF EXISTING HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED HANGERS AND INSULATION.
4. DISCONNECT, REMOVE AND DISPOSE OF EXISTING HOOD, EXHAUST FAN AND ASSOCIATED ROOF CURB ON ROOF. REMOVE AND DISPOSE ALL EXISTING ASSOCIATED DUCT, INSULATION AND GRILLES.
5. DISCONNECT, REMOVE AND DISPOSE EXISTING UNIT HEATER, HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED HYDRONIC SPECIALTIES AND CONTROLS.
6. REMOVE AND DISPOSE OF EXISTING DUCT,INSULATION, HANGERS AND ASSOCIATED REGISTERS AND GRILLES. PATCH AND REPAIR OPENINGS.
7. DISCONNECT, REMOVE AND DISPOSE OF EXISTING WALL MOUNTED SPLIT AIR CONDITIONER AND ASSOCIATED CONDENSING UNIT AND REFRIGERANT PIPING.
8. DISCONNECT, REMOVE AND DISPOSE OF EXISTING CONVECTOR AND ENCLOSURE, HOT WATER SUPPLY AND RETURN PIPING, HYDRONIC SPECIALTIES AND CONTROLS.
9. REMOVE ALL EXISTING HYDRONIC PIPING, INSULATION , VALVES AND FITTINGS IN THE BUILDING.
10. DISCONNECT, REMOVE AND DISPOSE OF ENTIRE CONTROL SYSTEM INCLUDING THERMOSTAT ASSOCIATED WIRING AND/OR PNEUMATIC TUBING. TYPICAL FOR ALL THERMOSTATS. COORDINATE IN FIELD.

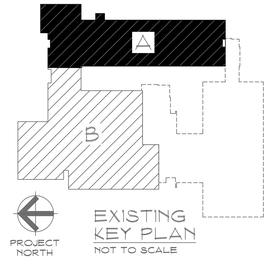
1ST FLOOR MECHANICAL DEMO PLAN, AREA "A"

SCALE: 1/8" = 1'-0"

1 / M101

PHASING NOTES

1. EXISTING ENTRY WAY AND CORRIDOR TO BE RENOVATED DURING FIRST PHASE OF CONSTRUCTION. RELOCATE ANY UNDERGROUND OR PIPING RUNNING WITHIN CHASES TO ABOVE CEILING. REFER TO ARCHITECTURAL PHASING PLANS.
2. EXISTING CORRIDOR TO HAVE NEW HOT WATER MAINS RUN DURING PHASE 2 OF CONSTRUCTION.



Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
Crystal Lake Elementary School
284 Sandy Beach Road
Ellington, Connecticut 06029

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518-2340
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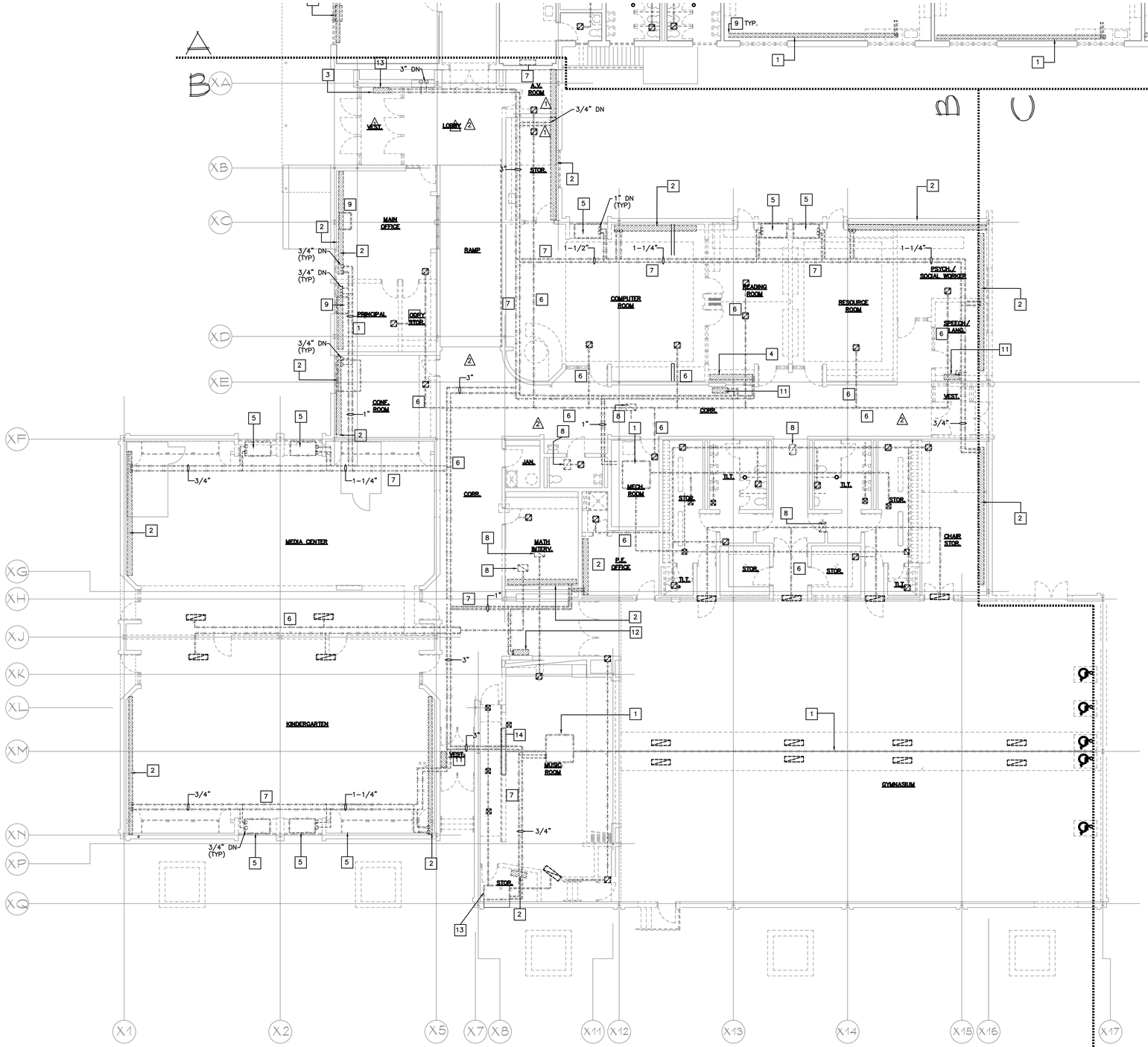
Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
1st FLOOR MECHANICAL DEMO PLAN, AREA "A"
State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: AS NOTED
Drawn By: VHS
Project Number: 12.140
Drawing Number: M101



1ST FLOOR MECHANICAL DEMO PLAN, AREA "B" (1 / M102)

SCALE: 1/8" = 1'-0"

DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING PIPING OR EQUIPMENT TO BE REMOVED
	EXISTING PIPING, DUCTWORK OR EQUIPMENT TO BE REMOVED
	EXISTING GRILLE TO BE REMOVED
	EXISTING REGISTER/ DIFFUSER TO BE REMOVED

GENERAL NOTES

1. THE INTENT OF THIS DOCUMENT IS FOR THE CONTRACTOR TO REMOVE ALL EXISTING MECHANICAL EQUIPMENT, FINNED TUBE RADIATION, CONVECTOR, HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED INSULATION AND HANGERS, HOT WATER PIPING, DUCTWORK AND CONTROLS.
2. CONSTRUCTION WILL BE COMPLETED IN MULTIPLE PHASES. REVIEW AND COORDINATE WITH THE GENERAL CONTRACTOR'S APPROVED SEQUENCING PLAN.
3. THE DEMOLITION NOTES ARE FOR DESCRIPTIVE GUIDE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL ITEMS WHETHER OR NOT INDICATED AND/ OR NOTED ON THE DRAWINGS. LOCATIONS AND QUANTITIES SHOWN ON THE DEMOLITION DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE FULL EXTENT OF WORK.
4. ALL WASTE MATERIALS AND EQUIPMENT SHALL BE REMOVED FROM SITE AND SHALL BE LEGALLY DISPOSED BY THE CONTRACTOR.
5. NO WORK SHALL BE LEFT INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
6. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND PIPING SYSTEM, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON.
7. COORDINATE SHUTDOWN OF EXISTING SERVICES AND TAPPING OF EXISTING PIPING WITH OWNER'S MAINTENANCE PERSONNEL. NO WORK SHALL TAKE PLACE UNTIL DOING SO.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL TRADES.
9. ENSURE THAT POWER IS SECURED OFF PRIOR TO COMMENCING EQUIPMENT REMOVAL. SECURE POWER BACK TO PANEL FOR EQUIPMENT BEING REMOVED.
10. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

DEMOLITION NOTES

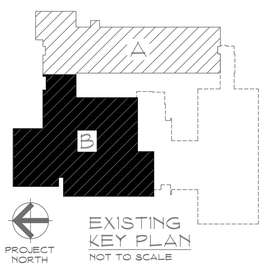
1. DISCONNECT, REMOVE AND DISPOSE OF EXISTING AIR HANDLING SYSTEM. REMOVE AND DISPOSE ASSOCIATED DUCTWORK, EXISTING INSULATION, HOT WATER PIPING, GRILLES, ACCESSORIES AND ASSOCIATED CONTROLS.
2. DISCONNECT, REMOVE AND DISPOSE OF EXISTING FIN-TUBE RADIATION ELEMENT SUPPORT AND ENCLOSURE, HOT WATER SUPPLY AND RETURN PIPING, HYDRONIC SPECIALTIES AND CONTROLS.
3. DISCONNECT, REMOVE AND DISPOSE OF ENTIRE CONTROL SYSTEM INCLUDING THERMOSTAT ASSOCIATED WIRING AND/OR PNEUMATIC TUBING. TYPICAL FOR ALL THERMOSTATS. COORDINATE IN FIELD.
4. DISCONNECT, REMOVE AND DISPOSE EXISTING FIN-TUBE RADIATION ELEMENT SUPPORT AND ENCLOSURE, HOT WATER SUPPLY AND RETURN PIPING, HYDRONIC SPECIALTIES AND CONTROLS.
5. DISCONNECT, REMOVE AND DISPOSE EXISTING UNIT VENTILATOR HOT WATER SUPPLY AND RETURN PIPING, FRESH AIR INTAKE LOUVER AND ALL ASSOCIATED HYDRONIC SPECIALTIES AND CONTROLS. COORDINATE FILLING AND PATCHING OF OPENING.
6. REMOVE AND DISPOSE EXISTING DUCT,INSULATION, HANGERS AND ASSOCIATED REGISTERS AND GRILLES.
7. DISCONNECT, REMOVE AND DISPOSE OF EXISTING HOT WATER SUPPLY AND RETURN PIPING, FITTINGS,, VALVES ALL ASSOCIATED HANGERS AND INSULATION IN THE BUILDING.
8. DISCONNECT, REMOVE AND DISPOSE EXISTING ROOF MOUNTED EXHAUST FANS AND ASSOCIATED DUCTWORK AND CONTROLS. COORDINATE PATCHING AND REPAIRING OF OPENING.
9. DISCONNECT, REMOVE AND DISPOSE OF EXISTING WINDOW AIR CONDITIONER.
10. DISCONNECT, REMOVE AND DISPOSE OF EXISTING WALL MOUNTED SPLIT AIR CONDITIONER AND ASSOCIATED CONDENSER UNIT AND REFRIGERENT PIPING.
11. DISCONNECT, REMOVE AND DISPOSE EXISTING CABINET UNIT HEATER, HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED HYDRONIC SPECIALTIES AND CONTROLS. COORDINATE FILLING AND PATCHING OF OPENING.
12. DISCONNECT, REMOVE AND DISPOSE EXISTING CONVECTOR, HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED HYDRONIC SPECIALTIES AND CONTROLS. COORDINATE FILLING AND PATCHING OF OPENING.
13. DISCONNECT, REMOVE AND DISPOSE EXISTING CEILING MOUNTED UNIT VENTILATOR, HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED HYDRONIC SPECIALTIES AND CONTROLS. ALSO REMOVE ASSOCIATED DUCTWORK, INSULATION, GRILLES, AND ACCESSORIES. COORDINATE FILLING AND PATCHING OF OPENING. KEEP THE OUTSIDE AIR LOUVER AS IT IS. REFER TO ARCHITECTURAL PLANS FOR MORE DETAILS.
14. KEEP THE OUTSIDE AIR LOUVER. DISCONNECT, REMOVE AND DISPOSE DUCTWORK, INSULATION AND ACCESSORIES ASSOCIATED WITH IT. REFER TO ARCHITECTURAL PLANS FOR FURTHER DETAILS.

PHASING NOTES

1. EXISTING ENTRY WAY AND CORRIDOR TO BE RENOVATED DURING FIRST PHASE OF CONSTRUCTION. RELOCATE ANY UNDERGROUND OR PIPING RUNNING WITHIN CHASES TO ABOVE CEILING. REFER TO ARCHITECTURAL PHASING PLANS.
2. EXISTING CORRIDOR TO HAVE NEW HOT WATER MAINS RUN DURING PHASE 2 OF CONSTRUCTION.

PHASING NOTES

1. PIPING INSUALTION IS BEING ABATED AS PART OF PHASE CONTRACTOR SHALL REINULSATE ALL EXISTING PIPING WHICH HAS HAD INSULATION REMOVED AS PART OF ABATEMENT. PIPING SHALL INCLUDE STUBUPS AND BRANCHES TO INDIVIDUAL PIECES OF EQUIPMENT. PIPE SIZES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ACTUAL SIZES IN FIELD.



EXISTING KEY PLAN
NOT TO SCALE

Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
Crystal Lake Elementary School
284 Sandy Beach Road
Ellington, Connecticut 06029

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518-2340
Tel. 203 230 9007 Fax. 203 230 8247
silverpetrucelli.com

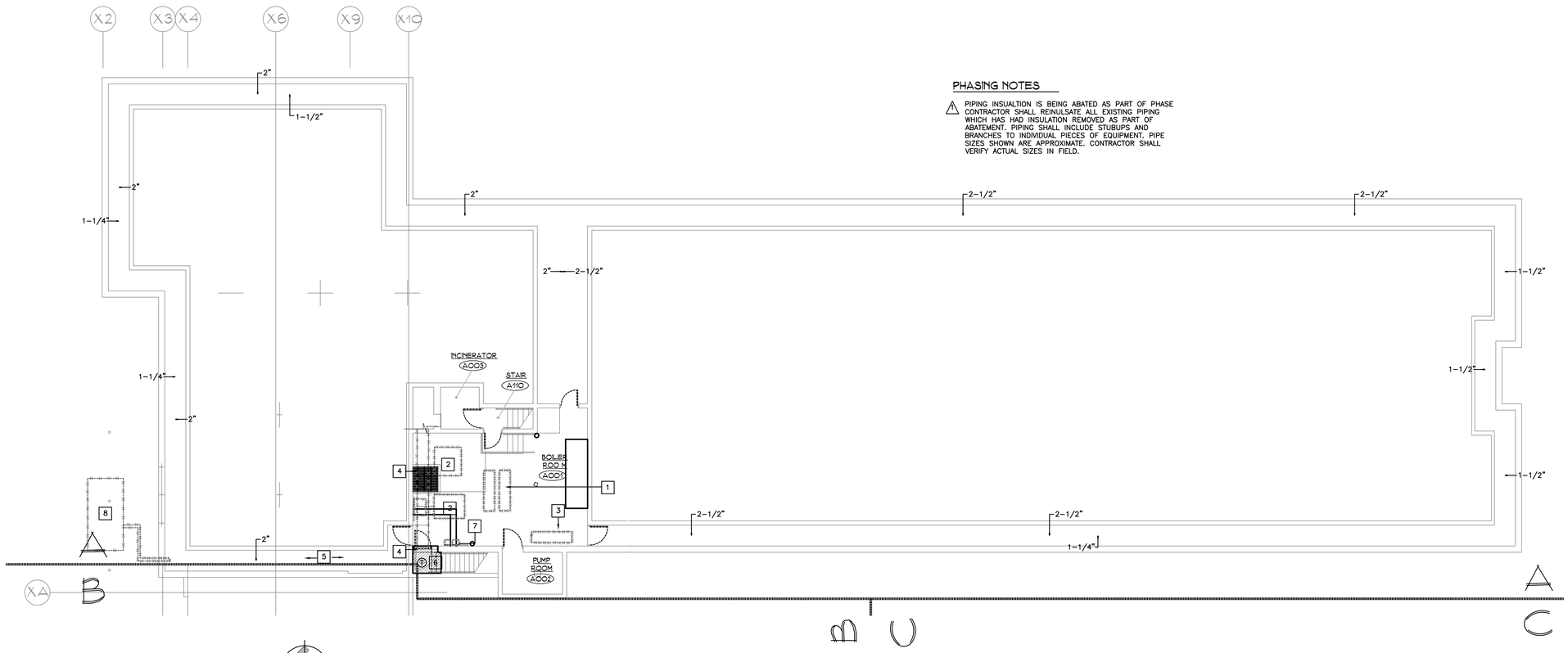
Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
1st FLOOR MECHANICAL DEMO PLAN, AREA "B"
State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: AS NOTED
Drawn By: VHS
Project Number: 12.140
Drawing Number: M102

TANK REMOVAL NOTES

1. CONTRACTOR SHALL REMOVE EXISTING TANK AND PIPING IN CONFORMANCE WITH ALL APPLICABLE LOCAL, STATE & FEDERAL STATUTES, REGULATIONS AND ORDINANCES. REMOVE AND LEGALLY DISPOSE OF 2,000 GAL. FUEL OIL STORAGE TANK, HOLD-DOWN PAD, PIPING TO BUILDING AND OTHER RELATED COMPONENTS.
2. CONTRACTOR SHALL PROVIDE CLEAN FILL AFTER EXCAVATION AND TESTING AND COMPLETELY FILL HOLE CREATED DURING REMOVAL. CONTRACTOR SHALL LEVEL GROUND AS REQUIRED AND PROVIDE PAVING TO MATCH EXISTING.
3. STOCKPILE ABSORBANT OIL SPILL CLEAN UP MATERIAL AT SITE PRIOR TO START OF EXCAVATION.
4. NOTIFY DEP THIRTY (30) DAYS OR MORE PRIOR TO START OF EXCAVATION.
5. LOCATION AND ORIENTATION OF EXISTING TANK & NEW TANK ARE APPROXIMATELY AS INDICATED. CONTRACTOR TO VERIFY LOCATION IN FIELD AND ADJUST INSTALLATION AS REQUIRED.
6. CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING AND NOTE ALL CONDITIONS UNDER WHICH WORK MUST BE CARRIED OUT.
7. CONTRACTOR SHALL REPORT ALL SPILLS TO THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP).
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS.
9. EXCAVATION SHALL BE DONE IN A SAFE MANNER TO AVOID DAMAGE TO FOUNDATION OF EXISTING STRUCTURE AND UNDERGROUND UTILITY LINES WITHIN AREA FOR WHICH CONTRACTOR IS RESPONSIBLE. THE TRENCH SHALL BE SLOPED PROPERLY TO ALLOW WORKERS TO REMOVE ANCHORS AND RELEASE TANK FROM CONCRETE PAD. PROVIDE ADEQUATE SUPPORTS TO AVOID TANK ROLLOVER.
10. CONTRACTOR SHALL SECURE AND PROTECT AREA IN CONFORMANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS AND OWNER'S INSURER.
11. REMOVAL OF TANK AND PIPING SHALL CONFORM TO REQUIREMENTS OF APPENDIX C OF NFPA 30 AND DEP REQUIREMENTS
12. REMOVE FUEL OIL FROM TANK AND DELIVER TO LOCATION AS DIRECTED BY OWNER. CLEAN TANK IN ACCORDANCE WITH NFPA 327 BY REMOVING ALL LIQUIDS, SLUDGE AND VAPORS. DISPOSE OF MATERIALS IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
13. AFTER CLEANING, OBTAIN APPROVAL FROM LOCAL FIRE MARSHALL, BUILDING INSPECTOR AND DEP BEFORE PROCEEDING WITH DISPOSAL.
4. TANK SHALL BE GAS FREED ON SITE IMMEDIATELY UPON REMOVAL. A SUFFICIENT NUMBER OF HOLES SHALL BE MADE TO RENDER TANK UNFIT FOR FUTURE USE AND PREVENT VAPOR ACCUMULATION.
15. TEST SOIL – REFER TO "SOIL TESTING NOTES".
16. CONTRACTOR SHALL IMMEDIATELY NOTIFY DEP IF SOIL IS CONTAMINATED. REMOVAL AND DISPOSAL OF CONTAMINATED SOIL AND WATER SHALL BE HANDLED ON A UNIT COST BASIS ACCORDING TO THE BID FORM.
17. IF STORED ON SITE, CONTAMINATED SOIL SHALL BE PILED ON AND COVERED WITH 8 MIL POLYETHYLENE SHEETING. COVERING SHALL BE SECURED. SITE STORAGE LOCATION SHALL APPROVED BY DEP.
18. ALL CONTAMINATED OR HAZARDOUS MATERIALS SHALL BE LEGALLY DISPOSED OF IN A DEP APPROVED SITE.
19. PROVIDE CLEAN FILL REQUIRED TO REPLACE CONTAMINATED SOIL.



BASEMENT MECHANICAL DEMO PLAN

SCALE: 1/8" = 1'-0"

1 / MD103

PHASING NOTES

⚠ PIPING INSUALTION IS BEING ABATED AS PART OF PHASE CONTRACTOR SHALL REINULSATE ALL EXISTING PIPING WHICH HAS HAD INSULATION REMOVED AS PART OF ABATEMENT. PIPING SHALL INCLUDE STUBUPS AND BRANCHES TO INDIVIDUAL PIECES OF EQUIPMENT. PIPE SIZES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ACTUAL SIZES IN FIELD.

DEMOLITION NOTES

1. DISCONNECT, REMOVE AND DISPOSE OF EXISTING COMPRESSION TANKS, ASSOCIATED PIPING, INSULATION, VALVES , HYDRONIC SPECIALITIES AND CONTROLS.
2. DISCONNECT, REMOVE AND DISPOSE OF EXISTING BOILERS, ASSOCIATE HOT WATER SUPPLY AND RETURN PIPING, OIL PIPING , VALVES, HYDRONIC SPECIALITIES AND CONTROLS.
3. DISCONNECT, REMOVE AND DISPOSE OF EXISTING AIR COMPRESSOR AND ASSOCIATED CONTROLS AND PIPING.
4. DISCONNECT, REMOVE AND DISPOSE OF EXISTING BREECHING AND AIR INTAKE LOUVER OVER THE DOOR. REMOVE ASSOCIATED ACCESSORIES AND CONTROLS. PATCH AND REPAIR ROOF PENETRATIONS AND WALL OPENINGS.
5. DISCONNECT, REMOVE AND DISPOSE OF EXISTING HOT WATER SUPPLY AND RETURN PIPING, OIL PIPING, VALVES, FITTINGS, ALL ASSOCIATED HANGERS AND INSULATION.
6. DISCONNECT, REMOVE AND DISPOSE OF THERMOSTAT AND ASSOCIATED WIRING, PNEUMATIC PIPING AND CONTROLS.
7. DISCONNECT, REMOVE AND DISPOSE OF EXISTING INLINE HOT WATER PUMPS AND ASSOCIATE PIPINGS, CONTROLS AND HYDRONIC SPECIALITIES.
8. GENERAL LOCATION OF EXISTING FUEL OIL TANK AND FUEL OIL PIPING.
   - PUMP OUT USABLE FUEL OIL FROM TANK AND PUMP INTO TEMPORARY FUEL OIL TANK WITHIN SITE. REFER TO TEMPORARY OIL TANK NOTES ON THIS DRAWING FOR MORE INFORMATION.
   - PUMP OUT REMAINING FUEL OIL AND SLUDGE IN THE TANK AND CLEAN THE TANK IN ACCORDANCE WITH LOCAL CODES AND CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION. DISPOSAL OF SLUDGE OFF-SITE SHALL BE IN ACCORDANCE WITH THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
   - NOTIFY CALL BEFORE YOU DIG (1-800-922-4455) AT LEAST 72 HOURS IN ADVANCE OF CONSTRUCTION.
   - REMOVE AND DISPOSE EXISTING PAVEMENT. EXCAVATE AND REMOVE EXISTING FUEL OIL TANK AND FUEL OIL PIPING.
   - HAUL AND DISPOSE TANK TO A CERTIFIED SALVAGE DUMP.
   - CLEARLY DEFINE THE AREA OF CONSTRUCTION BY PROVIDING A SAFETY FENCE.
   - REFER TO TANK REMOVAL NOTES ON THIS DRAWING FOR MORE INFORMATION.

DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT TO BE REMOVED
	EXISTING PIPING OR EQUIPMENT TO BE REMOVED
	EXISTING PIPING, DUCTWORK OR EQUIPMENT TO BE REMOVED
	EXISTING GRILLE TO BE REMOVED
	EXISTING REGISTER/ DIFFUSER TO BE REMOVED

GENERAL NOTES

1. THE INTENT OF THIS DOCUMENT IS FOR THE CONTRACTOR TO REMOVE ALL EXISTING MECHANICAL EQUIPMENT, FINNED TUBE RADIATION, CONVECTOR, HOT WATER SUPPLY AND RETURN PIPING AND ALL ASSOCIATED INSULATION AND HANGERS, HOT WATER PIPING, DUCTWORK AND CONTROLS.
2. CONSTRUCTION WILL BE COMPLETED IN MULTIPLE PHASES. REVIEW AND COORDINATE WITH THE GENERAL CONTRACTOR'S APPROVED SEQUENCING PLAN.
3. THE DEMOLITION NOTES ARE FOR DESCRIPTIVE GUIDE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL ITEMS WHETHER OR NOT INDICATED AND/ OR NOTED ON THE DRAWINGS. LOCATIONS AND QUANTITIES SHOWN ON THE DEMOLITION DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE FULL EXTENT OF WORK.
4. ALL WASTE MATERIALS AND EQUIPMENT SHALL BE REMOVED FROM SITE AND SHALL BE LEGALLY DISPOSED BY THE CONTRACTOR.
5. NO WORK SHALL BE LEFT INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
6. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND PIPING SYSTEM, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON.
7. COORDINATE SHUTDOWN OF EXISTING SERVICES AND TAPPING OF EXISTING PIPING WITH OWNER'S MAINTENANCE PERSONNEL. NO WORK SHALL TAKE PLACE UNTIL DOING SO.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH ALL TRADES.
9. ENSURE THAT POWER IS SECURED OFF PRIOR TO COMMENCING EQUIPMENT REMOVAL. SECURE POWER BACK TO PANEL FOR EQUIPMENT BEING REMOVED.
10. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

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Revision:	Description:	Date:	Revised By:
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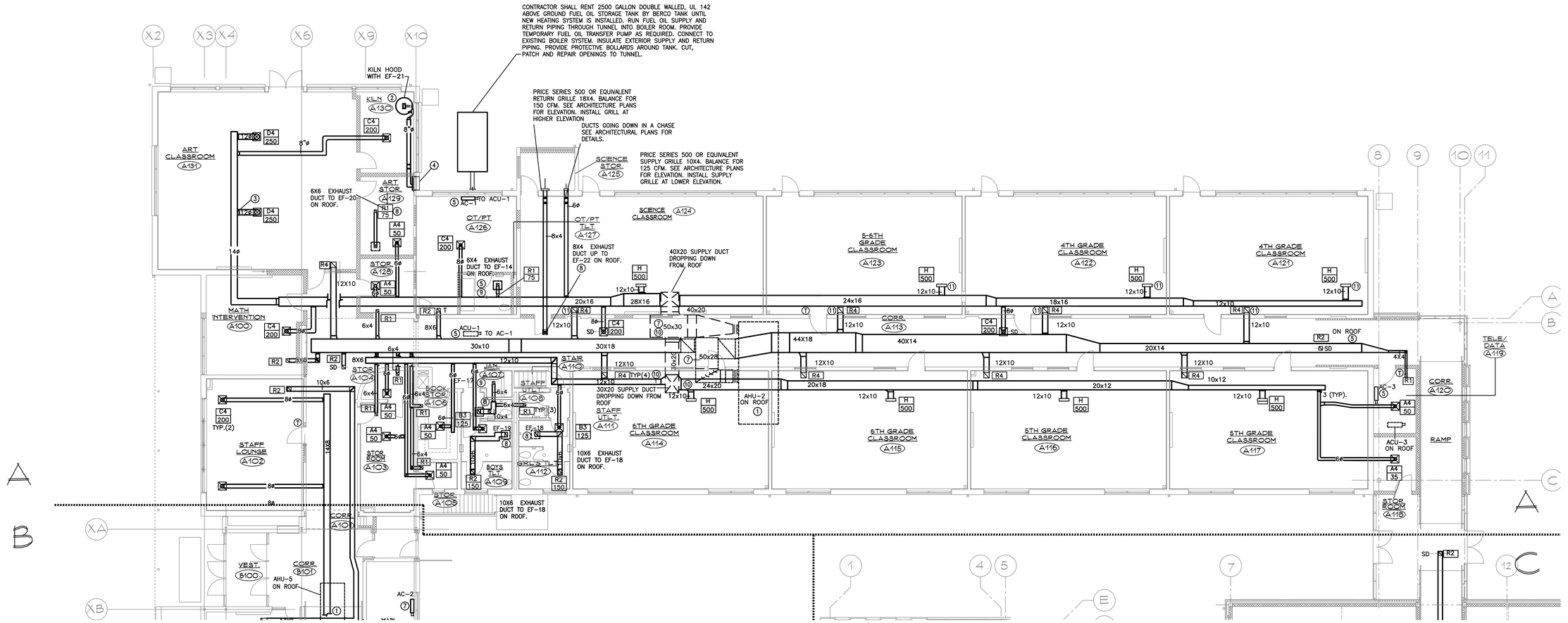
Drawing Title:
BASEMENT MECHANICAL DEMO PLAN

Date: JUNE 18, 2013
Scale: 1/8" = 1'-0"
Drawn By: VHS
Project Number: 12.140
Drawing Number: M103

State Project Number: 048-0058 EA/RR/PS



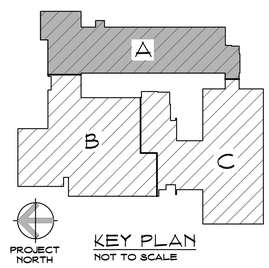
1ST FLOOR DUCTWORK PLAN, AREA "A"

SCALE: 1/8" = 1'-0"

1 / M201

MECHANICAL PLAN NOTES

1. ROOFTOP AIR HANDLING UNIT CURB MOUNTED ON ROOF ABOVE. REFER TO EQUIPMENT SCHEDULE M402 FOR VIBRATION CURB AND INTEGRAL SILENCERS. PROVIDE SUPPLY AND RETURN DUCT CONNECTIONS TO UNIT WITH FLEXIBLE CONNECTIONS. TRANSITION AND OFFSET SUPPLY AND RETURN DUCTS AS REQUIRED. MAINTAIN 10' MINIMUM CLEARANCE TO ROOF EDGE. INSTALL UNITS PER MANUFACTURER'S RECOMMENDATIONS. MAINTAIN CLEARANCE PER MANUFACTURER'S RECOMMENDATION.
2. INSTALL VENT-A-KILN VENTILATION SYSTEM WITH THE EXHAUST FAN MODEL: 1437-250 OR EQUAL FOR ELECTRIC KILN. INSTALL ABOVE KILN. COMPLETE WITH OVERHEAD PULLEYS, PULLEY SAFETY STRAP, SLIDE BRACKETS, CABLE AND COUNTERWEIGHT AS SUPPLIED WITH THE SYSTEM. CONTRACTOR SHALL PROVIDE ADDITIONAL COMPONENTS AND MECHANISM AS REQUIRED FOR A COMPLETE FUNCTIONAL SYSTEM. COORDINATE REQUIREMENTS BASED ON APPROVED KILNS. COORDINATE DUCT WORK ROUTING IN FIELD PER LOCATION OF KILN.
3. PROVIDE VOLUME CONTROL DAMPERS AT ALL SUPPLY, EXHAUST OR RETURN GRILLES/ REGISTERS.
4. 8 ø EXHAUST DUCT CONNECT TO SIDE WALL LOUVER. 0.5 SQFT OF FREE AREA REQUIRED. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION OF THE LOUVER. PATCHING AND REPAIRING OF THE OPENING.
5. PROVIDE STAND FOR MOUNTING CONDENSING UNIT ON THE ROOF.
   SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS BASED ON ACTUAL PIPING LAYOUT.
   REFER TO ARCHITECT'S DRAWING FOR ELEVATION AND HEIGHTS FOR MOUNTING INDOOR UNIT. REFER PLUMBING DRAWINGS FOR CONDENSATE REMOVAL ARRANGEMENTS.
6. 10X4 EXHAUST DUCT TO EF-17 ON ROOF.
7. DUCT RUNNING ON THE ROOF. PROVIDE ADEQUATE DUCT SUPPORTS.
8. FURNISH AND INSTALL NEW ROOF EXHAUST FAN . PROVIDE FRAMED ROOF OPENING. PROVIDE CURB FLASHING AND COUNTERFLASH WEATHER-TIGHT WITH MATERIAL COMPATIBLE WITH ROOFING. MAINTAIN 10' MINIMUM CLEARANCE TO ROOF EDGE.
9. 1" UNDERCUT OF THE DOOR FOR TRANSFER AIR PASSAGE.
10. PROVIDE DUCT LINING ON FIRST 15 FEET OF SUPPLY AND RETURN DUCTS OF ALL AIR HANDLING EQUIPMENT.
11. PROVIDE SUPPLY GRILLE ON THE SIDE WALL OF THE SOFFIT AND RETURN GRILLE ON THE BOTTOM OF THE SOFFIT.
    REFER TO ARCHITECTURAL PLANS FOR SOFFIT SIZE AND ELEVATION.



Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
Crystal Lake Elementary School
284 Sandy Beach Road
Ellington, Connecticut 06029

SILVER / PETRUCELLI + ASSOCIATES
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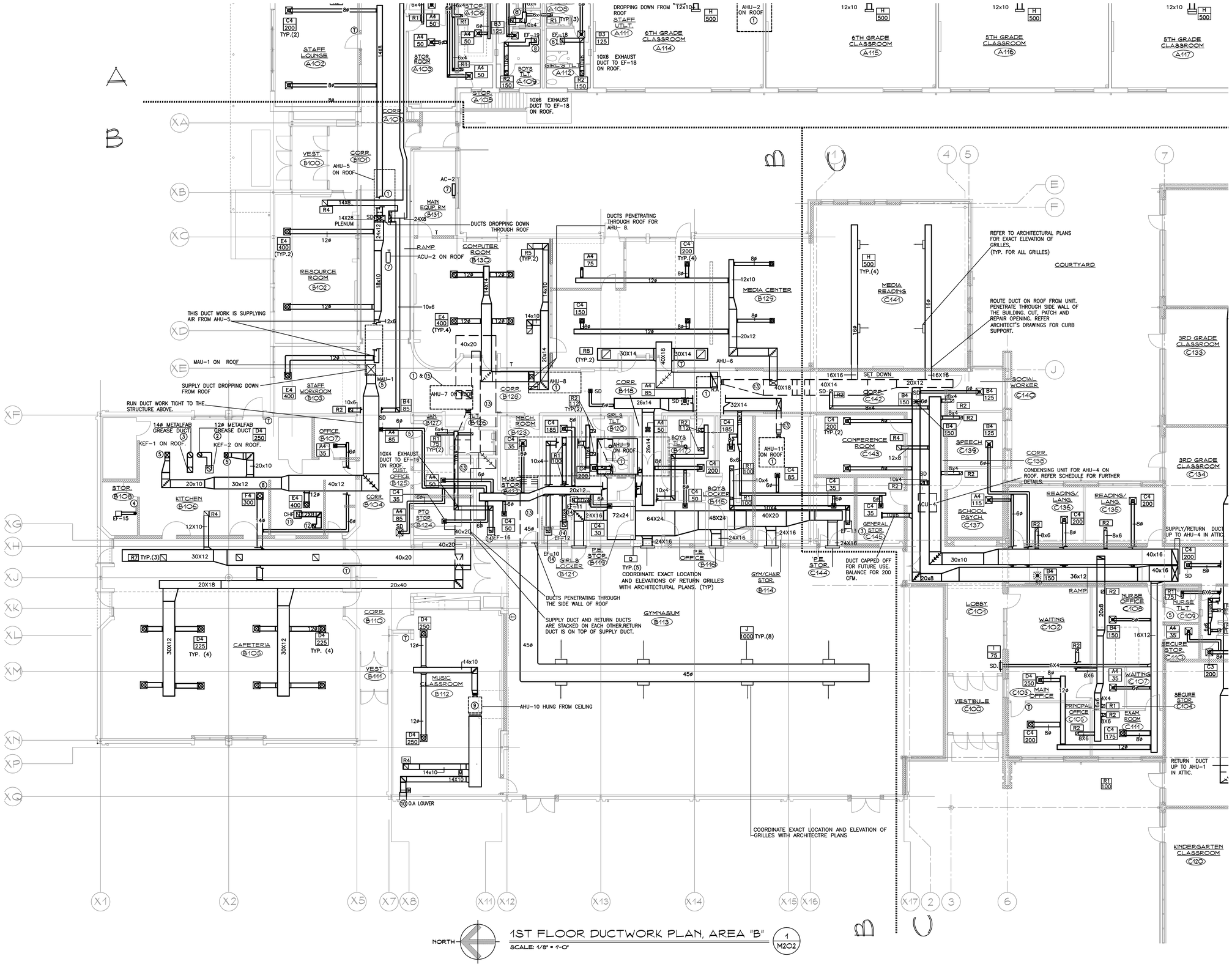
Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
1ST FLOOR DUCT PLAN, AREA "A"
State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: 1/8" = 1'-0"
Drawn By: VHS
Project Number: 12.140
Drawing Number: M201



NORTH

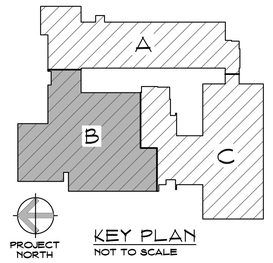
1ST FLOOR DUCTWORK PLAN, AREA "B"

SCALE: 1/8" = 1'-0"

1 / M202

MECHANICAL PLAN NOTES

1. ROOFTOP AIR HANDLING UNIT ON ROOF ABOVE. FOR CURB INTEGRAL WITH SILENCERS REFER TO SCHEDULE DRAWING M402. PROVIDE SUPPLY AND RETURN DUCT CONNECTIONS TO UNIT WITH FLEXIBLE CONNECTIONS. TRANSITION AND OFFSET SUPPLY AND RETURN DUCTS AS REQUIRED. MAINTAIN 10' MINIMUM CLEARANCE TO ROOF EDGE. INSTALL UNITS PER MANUFACTURER'S RECOMMENDATIONS. MAINTAIN CLEARANCE PER MANUFACTURER'S RECOMMENDATION.
2. 12" ø GREASE EXHAUST DUCT BY "METALFAB" OR EQUIVALENT UP THROUGH ROOF TO KEF-2. INSTALL EXHAUST FAN CURB MOUNTED ON ROOF ABOVE. MAINTAIN 10' MINIMUM CLEARANCE TO ROOF EDGE. INSTALL FAN IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS AND PER NFPA 96.
3. 14" ø GREASE EXHAUST DUCT BY "METALFAB" OR EQUIVALENT UP THROUGH ROOF TO KEF-1. INSTALL EXHAUST FAN CURB MOUNTED ON ROOF ABOVE. MAINTAIN 10' MINIMUM CLEARANCE TO ROOF EDGE. INSTALL FAN IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS AND NFPA 96.
4. 6" EXHAUST AIR DUCTWORK UP THROUGH ROOF. TERMINATE DUCT WITH GRAVITY RELIEF VENT, GREEENHECK MODEL GRSR-8 OR EQUAL.
5. SUPPLY DUCTWORK FROM MAU-1 TO HOOD -1 AND HOOD-2. REFER TO FOOD CONSULTANT'S PLAN FOR FURTHER DETAILS. PROVIDE SUITABLE TRANSITIONS TO MATCH HOOD CONNECTIONS.
6. PROVIDE VOLUME CONTROL DAMPERS AT ALL SUPPLY, EXHAUST OR RETURN GRILLES/ REGISTERS.
7. PROVIDE STAND FOR MOUNTING CONDENSING UNIT ON THE ROOF. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS BASED ON ACTUAL PIPING LAYOUT. REFER TO ARCHITECT'S DRAWING FOR ELEVATION AND HEIGHTS FOR MOUNTING INDOOR UNIT. REFER PLUMBING DRAWINGS FOR CONDENSATE REMOVAL ARRANGEMENTS.
8. ROUTE DUCTWORK HIGH IN CEILING TO AVOID INTERFERENCE WITH PIPING.
9. CEILING HUNG AIR HANDLING UNIT. PROVIDE SUPPORTS AND MAINTAIN CLEARANCE AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE SUPPLY AND RETURN DUCT CONNECTIONS TO UNIT WITH FLEXIBLE CONNECTIONS. TRANSITION AND OFFSET SUPPLY AND RETURN DUCTS AS REQUIRED. INSTALL UNITS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE UNIT WITH RIGHT SIDE ACCESS.
10. CONNECT DUCT WITH EXISTING OUTSIDE AIR LOUVER. FREE AREA REQUIRED IS 1 SQFT. CONNECT DUCT WITH SHEET METAL PLENUM.PROVIDE INSECT SCREEN.CUT, PATCH AND REPAIR THE OPENING. REFER ARCHITECT'S PLAN FOR EXACT LOCATION AND ELEVATION.
11. EXHAUST FAN ON THE ROOF. ROVIDE DRAIN CONNECTION. REFER TO KITCHEN CONSULTANT'S DRAWING FOR HOOD CONNECTION DETAILS.
12. CONNECT 12X8 EXHAUST DUCT TO CONDENSATE HOOD WITH APPROPRIATE TRANSITIONS. USE ALUMINUM DUCT, SEAL IT WATER TIGHT. SEE FOOD CONSULTANT'S DRAWING FOR HOOD INFORMATION.
13. DUCT RUNNING ON THE ROOF. PROVIDE ADEQUATE SEISMIC SUPPORTS.REFER TO ARCHITECT'S DRAWING FOR ROOF CURB/SUPPORT DETAILS.
14. FURNISH AND INSTALL NEW ROOF EXHAUST FAN . PROVIDE FRAMED ROOF OPENING. PROVIDE CURB FLASHING AND COUNTERFLASH WEATHER-TIGHT WITH MATERIAL COMPATIBLE WITH ROOFING. MAINTAIN 10' MINIMUM CLEARANCE TO ROOF EDGE.
15. UNIT SHOWN IS THE BASE DESIGN UNIT WITH NO COOLING. ALTERNATE DESIGN INCORPORATES COOLING . PLEASE REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR ALTERNATE EQUIPMENT SELECTION. UNIT LOCATION REMAINS THE SAME.COORDINATE WITH STRUCTURAL ENGINEER'S DRAWING.
16. PROVIDE DUCT LINING ON FIRST 15 FEET OF SUPPLY AND RETURN DUCTS OF ALL AIR HANDLING EQUIPMENT.
17. ENSURE ALL EXHAUST FANS ARE 25 FEET FROM OUTSIDE AIR INTAKE.



KEY PLAN
NOT TO SCALE

Project Title:
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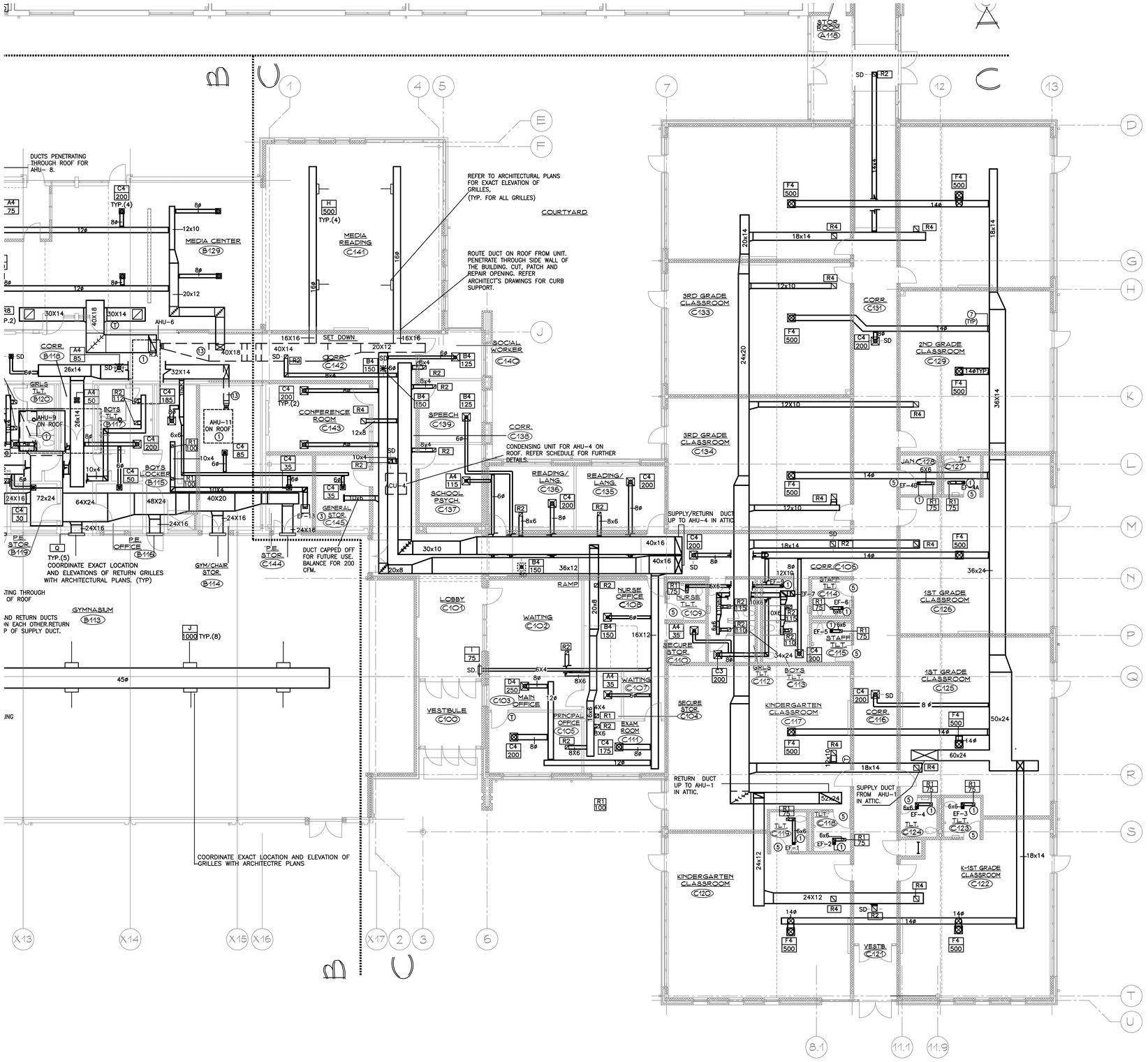
Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

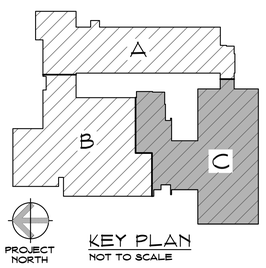
Drawing Title:
1ST FLOOR DUCT PLAN, AREA "B"
State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: 1/8" = 1'-0"
Drawn By: VHS
Project Number: 12.140
Drawing Number: M202



MECHANICAL PLAN NOTES

1. 6x6 EXHAUST DUCT UP TO ASSOCIATED EXHAUST FAN LOCATED IN ATTIC.
2. 12x10 EXHAUST DUCT UP TO EF-7 LOCATED IN ATTIC.
3. FURNISH AND INSTALL NEW ROOF EXHAUST FAN CURB MOUNTED. PROVIDE FRAMED ROOF OPENING. PROVIDE CURB FLASHING AND COUNTERFLASH WEATHER-TIGHT WITH MATERIAL COMPATIBLE WITH ROOFING. MAINTAIN 10' MINIMUM CLEARANCE TO ROOF EDGE.
4. PROVIDE STAND WITH VIBRATION ISOLATORS FOR MOUNTING CONDENSING UNIT ON THE ROOF. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS BASED ON ACTUAL PIPING LAYOUT. REFER PLUMBING DRAWINGS FOR CONDENSATE REMOVAL ARRANGEMENTS.
5. 1" UNDERCUT OF THE DOOR FOR TRANSFER AIR PASSAGE.
6. PROVIDE DUCT LINING ON FIRST 15 FEET OF SUPPLY AND RETURN DUCTS OF ALL AIR HANDLING EQUIPMENT.



KEY PLAN
NOT TO SCALE

1ST FLOOR DUCTWORK PLAN, AREA "C"

1 / M203

SCALE: 1/8" = 1'-0"

Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
Crystal Lake Elementary School
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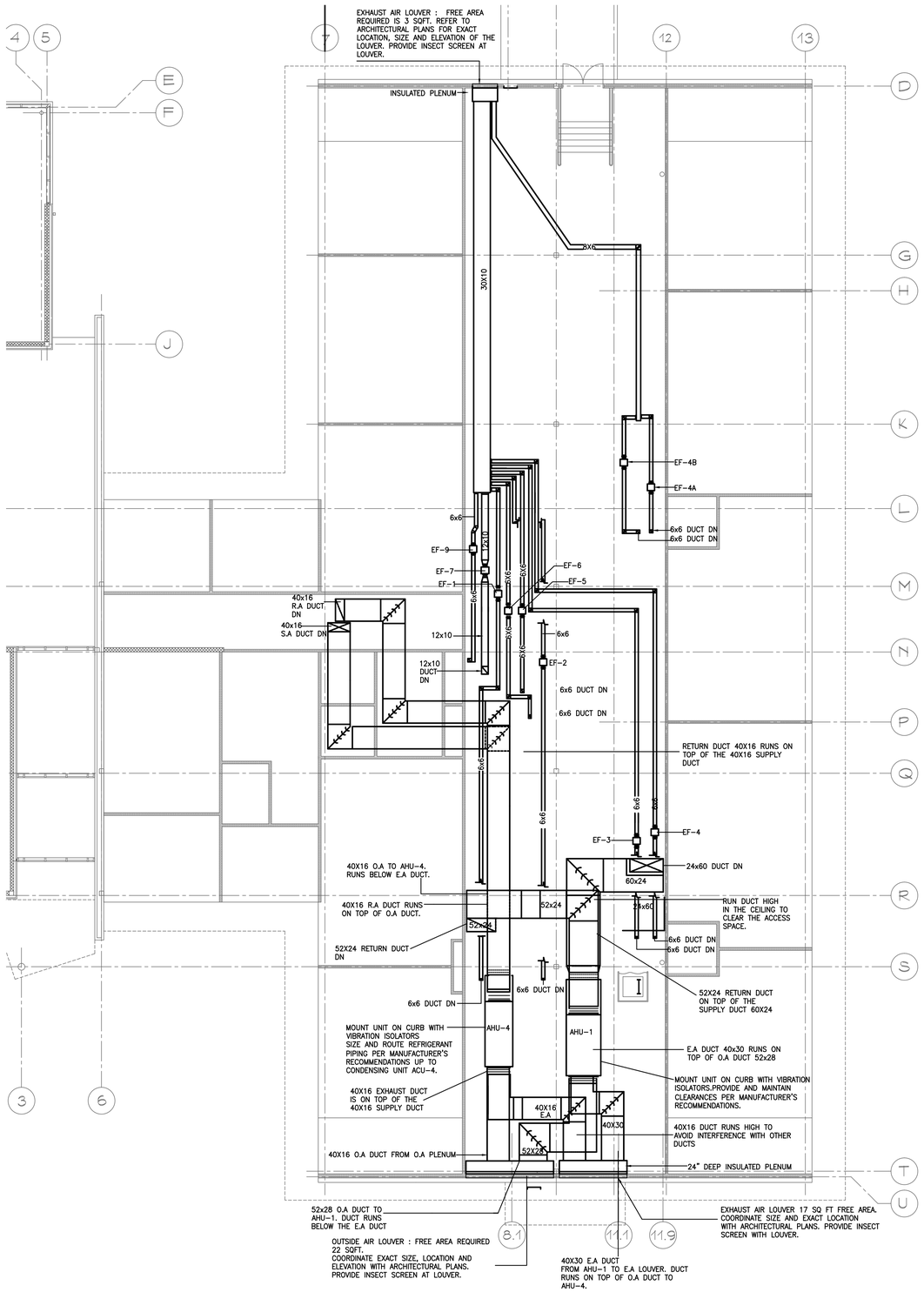
Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
1ST FLOOR DUCT PLAN, AREA "C"
State Project Number: 048-0058 EA/RR/PS

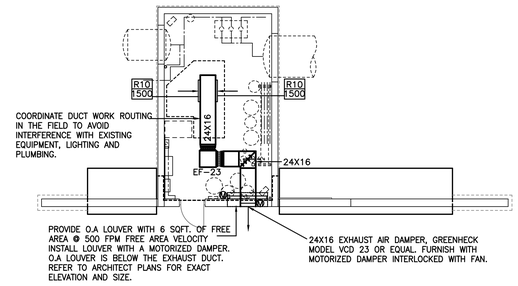
Date: JUNE 18, 2013
Scale: 1/8" = 1'-0"
Drawn By: VHS
Project Number: 12.140
Drawing Number: **M203**



NORTH

ATTIC FLOOR PLAN - AREA "C"

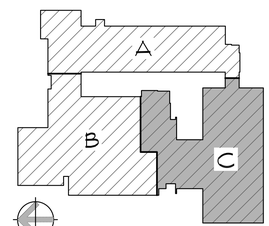
SCALE: 1/8" = 1'-0"



NORTH

WELL EQUIPMENT BUILDING

SCALE: 1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

Project Title:

Expansion and Renovate as New Project - PHASE 1 of 3

Crystal Lake Elementary School

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Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

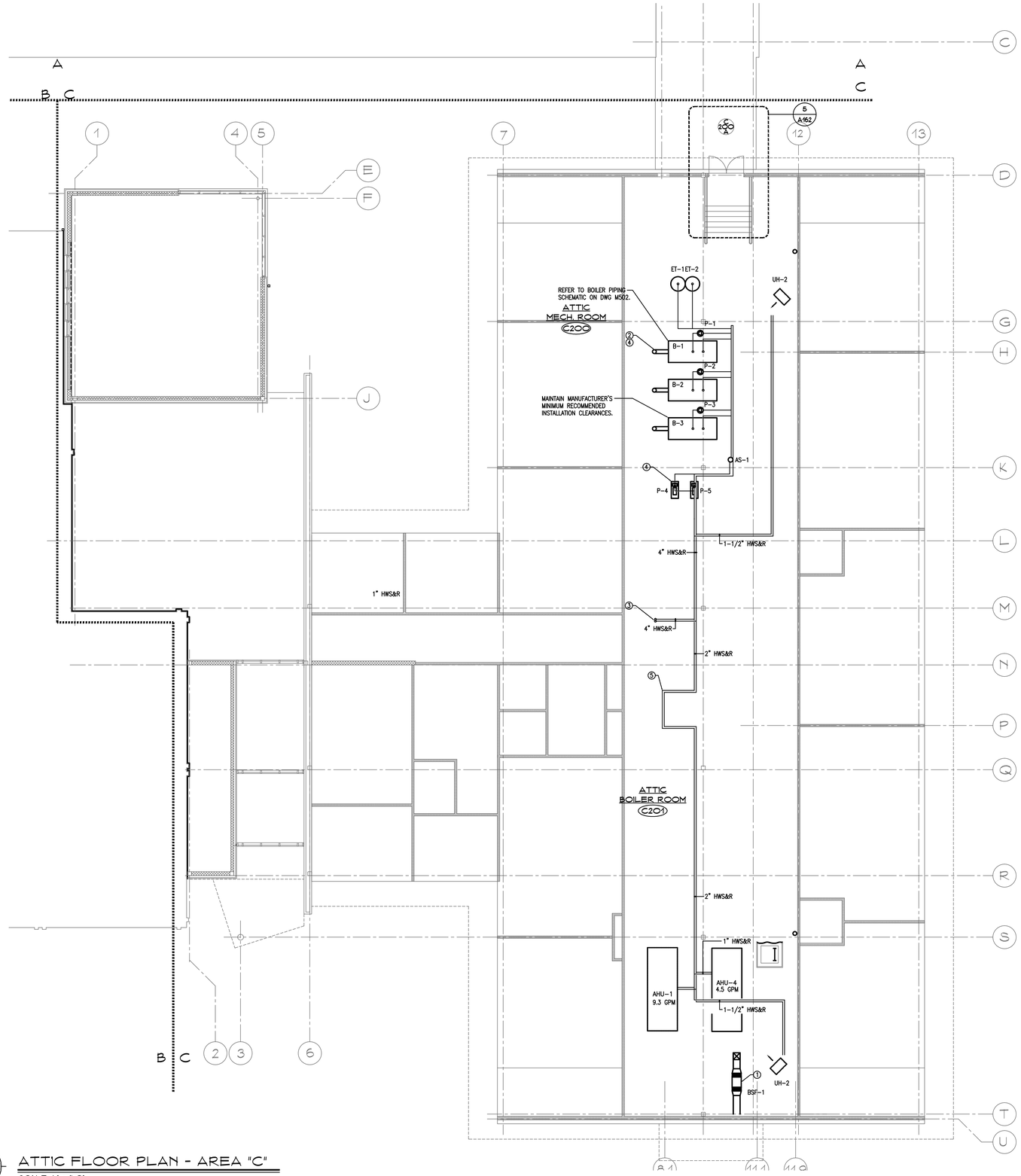
Drawing Title:

ATTIC
AND WELL EQUIPMENT
BUILDING DUCTWORK PLAN

State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: AS NOTED
Drawn By: VHS
Project Number: 12.140

Drawing Number: M204



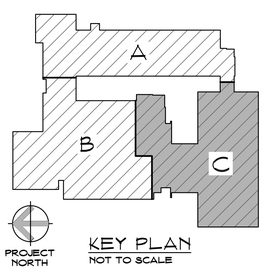
NORTH

ATTIC FLOOR PLAN - AREA "C"

SCALE: 1/8" = 1'-0"

PLAN NOTES

1. CONNECT 14X14 COMBUSTION AIR SUPPLY DUCT TO EXTERIOR LOUVER. COORDINATE WITH MECHANICAL DUCTWORK PLANS. INSTALL SUPPLY DUCTWORK DOWN WITH ELBOW DOWN TOWARDS FLOOR. PROVIDE FLEXIBLE CONNECTION AT FAN INTAKE AND OUTLET.
2. 8" STAINLESS STEEL FLUE THROUGH THE ROOF. CUT, PATCH AND REPAIR ROOF OPENING. BOILER MANUFACTURER SHALL CONFIRM SIZE AND ROUTING BASED ON ACTUAL INSTALLED FIELD DIMENSIONS. (TYP.-3)
3. 4" HWS&R DOWN TO CEILING OF FLOOR BELOW. CUT, PATCH AND REPAIR OPENING.
4. MOUNT BOILERS AND PUMPS ON 4" CONCRETE PADS.
5. REFER TO EXPANSION LOOP DETAIL FOR SIZING. PROVIDE PIPE GUIDES AND ANCHORS AS REQUIRED.



KEY PLAN
NOT TO SCALE

Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
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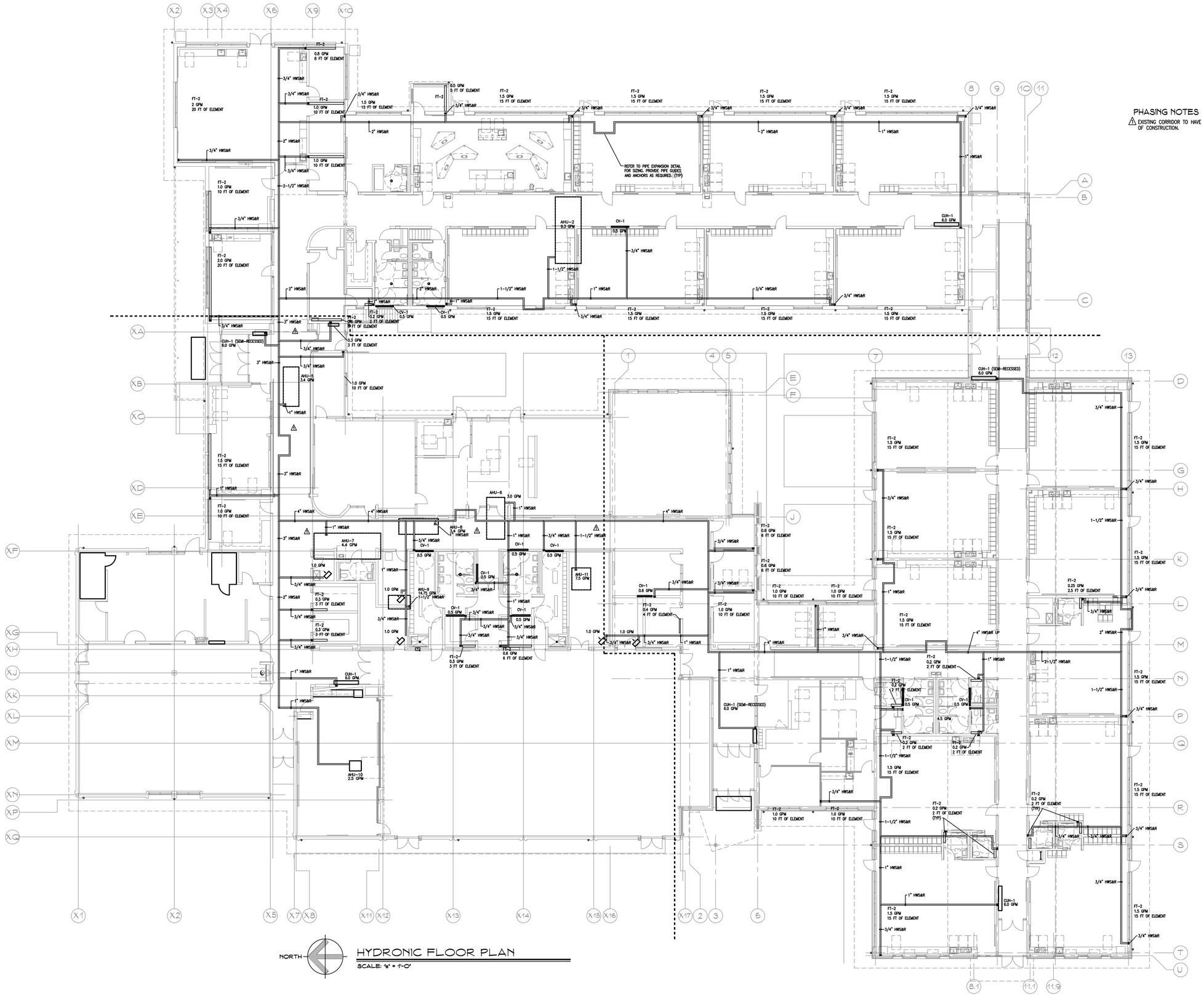
Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
ATTIC MECHANICAL/ HYRDONIC PLAN
State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: AS NOTED
Drawn By: MJC
Project Number: 12.140
Drawing Number: M301



Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
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Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
MAIN FLOOR HYRDONIC PLAN
State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: AS NOTED
Drawn By: MJC
Project Number: 12.140

Drawing Number:
M302

ALTERNATE # 1 CAFETERIA WITH COOLING

TAG	AREA SERVED	MANUFACTURER AND MODEL NO.	LOCATION	OUTSIDE AIR	SUPPLY AIR FAN					EXHAUST AIR FAN					WHEEL DATA SUMMER				WHEEL DATA WINTER				COOLING MODE						HEATING COIL (30% GLYCOL)						ELECTRICAL				FILTER				
				MINIMUM CFM	NOMINAL CFM	SP IN WG TSP	SP IN WG ESP	MOTOR HP	V-Ph-Hz	NOMINAL CFM	SP IN WG TSP	SP IN WG ESP	MOTOR HP	V-Ph-Hz	EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	TOTAL CAP (BTUH)	SENSIBLE CAP (BTUH)	EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	HEATING CAP (BTUH)	EAT °F	LAT °F	FLOW GPM	EWT °F	LWT °F	V-Ph-Hz	FLA AMP	MCA AMP	MOP AMP	SUPPLY AIR	RETURN AIR	DIMENSION	WEIGHT LB	REMARKS
AHU-7	CAFETERIA	VENMAR VHC-42	ROOF	0	3500	2.10	1.0	5.0	208-3-60	3500	2.47	1.0	5.0	208-3-60	95	78	80.9	67.7	0	0	52	42.5	162.3	–	80.9	67.7	52.6	52.6	162.5	52	95	7.56	180	140	208/3/60	89.8	95.6	125	2" MED.	2" MED.	142.6"Lx 60"W x 58.6"H	3035	

1. UNIT SHALL HAVE C02 SENSOR.
2. PROVIDE SUPPLY AND RETURN BY PASS DAMPER.

AIR HANDLING UNIT SCHEDULE

TAG	AREA SERVED	MANUFACTURER AND MODEL NO.	LOCATION	OUTSIDE AIR	SUPPLY AIR FAN					ENTHALPY WHEEL	EXHAUST AIR FAN					WHEEL DATA SUMMER				WHEEL DATA WINTER				COOLING MODE						HEATING COIL (30% GLYCOL)						ELECTRICAL				FILTER				
				MAXIMUM CFM	NOMINAL CFM	SP IN WG TSP	SP IN WG ESP	MOTOR HP	V-Ph-Hz	MOTOR & V-Ph-Hz	NOMINAL CFM	SP IN WG TSP	SP IN WG ESP	MOTOR HP	V-Ph-Hz	EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	TOTAL CAP (BTUH)	SENSIBLE CAP (BTUH)	EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	HEATING CAP (BTUH)	EAT °F	LAT °F	FLOW GPM	EWT °F	LWT °F	V-Ph-Hz	FLA AMP	MCA AMP	MOP AMP	SUPPLY AIR	RETURN AIR	DIMENSION	WEIGHT LB	REMARKS
AHU-1	CLASSROOMS ADDITION WING C	MCQUAY CAH012GHGC	ATTIC	6000	6000	2.83	1.25	5.0	200-3-60	0.75 HP 115-1-60	6000	2.68	1.50	5.0	200-3-60	88	72.8	80.7	71.2	0	-2.9	41.2	36.4							395277	30	90.2	19.76	180	140	200/3/60	13.71	–	–	MERV 8	MERV 7	170"L x 74"W x 84"H	4335	1 TO 10, 15
AHU-2	EXISTING CLASSROOMS, WING B	VENMAR VHC-72	ROOF	6235	6235	5.0	2.8	7.5	208-3-60	–	6000	4.96	2.8	7.5	208-3-60	95	78	80.8	68.0	0	0	52.5	42.6							275000	52.5	95	13.75	180	140	208/3/60	46.1	51.5	70	MERV 7	MERV 7	186"L x 90"W x 95"H	7050	1 TO 12, 15
AHU-3	NOT USED																																										
AHU-4	ADMINISTRATION AREA WING C	MCQUAY CAH006GDGC	ATTIC	750	2500	2.97	1.25	3.0	200-3-60	0.5 HP 115-1-60	2500	2.59	1.50	3.0	200-3-60	88	72.8	80.2	71.1	0	-2.9	43.6	38.3	74085	51003	80	67	58	56	172907	30	101.9	8.65	180	140	200/3/60	8.16	–	–	MERV 8	MERV 7	164"L x 48"W x 60"H	2800	1 TO 10,15
AHU-5	STAFF ROOM/RESOURCE RM/STAFF LOUNGE (WING B/A)	VENMAR VHC-36	ROOF	560	1600	3.42	2.0	2.0	208-3-60	–	1600	2.31	1.0	1.5	208-3-60	95	78	79.7	66.6	0	0	55.9	44.9	55600	41000	79.7	66	55.9	55.5	67565	55.9	95	3.4	180	140	208/3/60	32.8	36.8	50.0	2" MED.	2" MED.	135"L x 52.9"W x 53"H	2410	1 TO 12
AHU-6	MEDIA CENTRE	VENMAR VHC-42	ROOF	750	3000	4.3	2.0	5.0	208-3-60	–	3000	2.86	1.0	3.0	208-3-60	95	78	80.4	67.3	0	0	53.3	43.3	114,700	79,700	80.4	67.3	55.8	55.2	126590	52.3	92	6.3	180	140	208/3/60	65.3	69.3	90	2" MED.	2" MED.	176"L x 61"W x 59"H	3250	1 TO 12,15
AHU-7	CAFETERIA	VENMAR VHC-42	ROOF	2100	2100	1.50	1.0	1.0	208-3-60	–	2100	1.97	1.0	1.5	208-3-60	95	78	79.5	66.4	0	0	56.4	45.3							88000	56.4	95	4.4	180	140	208/3/60	10.0	11.1	15.0	2" MED.	2" MED.	109"L x60.9"W x 58.6"H	2328	1 TO 15
AHU-8	COMPUTER LAB	VENMAR VHC-36	ROOF	450	1600	3.42	2.0	2.0	208-3-60	–	1600	2.31	1.0	1.5	208-3-60	95	78	79.7	66.6	0	0	55.9	44.9	56700	41500	79.7	66.6	55.6	55.3	68000	55.9	95	3.38	180	140	208/3/60	51.8	36.8	50.0	2" MED.	2" MED.	135"L x 53"W x 52.6"H	2410	1 TO 12
AHU-9	GYMNASIUM	MCQUAY RAH047C	ROOF	8000	8000	2.14	2.0	5.0	208-3-60		8000	1.48	1.0	5.0	208-3-60	95	78	75.9	62.5	0	0	60.9	54.1							294624	60.9	95	14.73	180	140	208/3/60	–	35.3	50	2" MED.	2" MED.	384"L x 99"W x 87"H	11900	1 TO 15
AHU-10	MUSIC ROOM	MCQUAY LAH003A	CEILING	500	1000	1.27	1.0	0.75	208-3-60	–	–	–	–	–	–															51300	0	95	2.56	180	140	208/3/60	3.2			MERV 7		40"L x 35"W x 22"H	335	1 TO 10,16
AHU-11	LOCKER AREA + CORRIDOR	MCQUAY OAH003GHAC	ROOF	1500	1500	1.82	1.0	1.5	200-3-60	–	–	–	–	–	–															150416	0	91.7	7.53	180	140	200/3/60	4.8			MERV 8		72"L x 64"W x 34"H	1030	1 TO 11

1. UNIT SHALL HAVE MODULE SECTIONS WITH HINGED ACCESS DOORS. UNIT COMPONENTS SHALL BE ACCESSED ONE SIDE ONLY. COORDINATE ACCESS IN FIELD.
2. CONTROLLERS, SENSORS AND OTHER CONTROL COMPONENTS TO PERFORM THE REQUIRED SEQUENCE OF OPERATIONS SHALL BE FURNISHED BY CONTROLS CONTRACTOR. UNIT MOUNTED COMPONENTS, SENSORS AND CONTROLLERS SHALL BE SHIPPED TO THE FACTORY FOR FACTORY INSTALLATION. VFDS SHALL BE PROVIDED BY CONTROLS CONTRACTOR.
4. COIL SHALL BE BASED ON 30% PROPYLENE GLYCOL SOLUTION
5. MANUFACTURER SHALL PROVIDE MOTOR STARTERS FOR BOTH SUPPLY AND EXHAUST FANS. CONTROLLERS SHALL BE INSTALLED INSIDE DOUBLE WALL CASING.
6. SUPPLY & RETURN FAN, MOTOR & DRIVE SHALL BE MOUNTED ON SPRING ISOLATORS. PROVIDE PREMIUM EFFICIENCY MOTOR TO COMPLY WITH APPLICABLE UTILITY REBATE PROGRAM
7. PROVIDE HINGED ACCESS DOORS FOR EASY ACCESS TO BLOWERS, FILTERS AND COIL SECTIONS.
9. REFER TO SPECIFICATION SECTION FOR MORE INFORMATION
10 CONTROL CONTRACTOR SHALL PROVIDE VFD FOR THE UNIT SUPPLY,RETURN/EXHAUST FANS AND ENERGY WHEEL.
11. SEISMICALLY SUPPORT. PROVIDE SPRING ISOLATED SEISMIC CURB WITH INTEGRAL SILENCERS BY 'VIBROACCOUSTIC' OR EQUIVALENT AS SHOWN IN M402.
12. SINGLE POINT CONNECTION. MANUFACTURER SHALL PROVIDE DISCONNECT SWITCH.
14. FURNISH UNIT WITH RECIRCULATION DAMPER SIZED AT 100% SUPPLY AIR FOR UNOCCUPIED MODE OPERATION.
15 PROVIDE SMOKE DETECTORS AT SUPPLY DUCTWORK.
16 PROVIDE UNIT WITH RIGHT SIDE ACCESS ONLY. PROVIDE UNIT WITH SIDE FILTER ACCESS.

REGISTERS, GRILLES AND DIFFUSERS

TAG	SIZE	TYPE	NECK #	CFM	MAX TOTAL PRESSURE (IN. WG)	MAX NC	MANUFACTURER & MODEL NO.
A	6X6	CEILING DIFFUSER	6"	0-120	0.131	21	PRICE 4 WAY ADJUSTABLE SUPPLY DIFFUSER
B	9X9	CEILING DIFFUSER	6"	121-155	0.103	21	PRICE 4 WAY ADJUSTABLE SUPPLY DIFFUSER
C	12X12	CEILING DIFFUSER	8"	156-245	0.080	20	PRICE 4 WAY ADJUSTABLE SUPPLY DIFFUSER
D	12X12	CEILING DIFFUSER	12"	246-390	0.092	20	PRICE 4 WAY ADJUSTABLE SUPPLY DIFFUSER
E	15X15	CEILING DIFFUSER	12"	391-471	0.085	22	PRICE 4 WAY ADJUSTABLE SUPPLY DIFFUSER
F	18X18	CEILING DIFFUSER	14"	472-640	0.080	22	PRICE 4 WAY ADJUSTABLE SUPPLY DIFFUSER
G	18X18	CEILING DIFFUSER	16"	641-977	0.109	29	PRICE 4 WAY ADJUSTABLE SUPPLY DIFFUSER
H	28X8	SIDEWALL S.A GRILLE		500	0.010	<18	PRICE 500 SERIES SUPPLY GRILLE/REGISTER
I	8X4	SIDEWALL S.A GRILLE		75	0.006	<18	PRICE 500 SERIES SUPPLY GRILLE/REGISTER
J	12X48	S.A GRILLE		1000	0.04	<18	PRICE HCD SERIES DRUM LOUVER DIFFUSER
K	22X6	SIDEWALL S.A GRILLE		300	0.010	<18	PRICE 500 SERIES SUPPLY GRILLE/REGISTER
L	20X6	SIDEWALL S.A GRILLE		250	0.010	<18	PRICE 500 SERIES RETURN/EXHAUST GRILLE
M	28X8	SIDEWALL R.A GRILLE		500	0.069	19	PRICE 500 SERIES RETURN/EXHAUST GRILLE
N	8X4	SIDEWALL R.A GRILLE		75	0.069	<18	PRICE 500 SERIES RETURN/EXHAUST GRILLE
O	24X4	SIDEWALL R.A GRILLE		200	0.069	16	PRICE 500 SERIES RETURN/EXHAUST GRILLE
P	30X6	SIDEWALL R.A GRILLE		400	0.044	18	PRICE 500 SERIES RETURN/EXHAUST GRILLE
Q	36X16	SIDE WALL RETURN		1600	0.016	16	PRICE SERIES 95D HEAVY DUTY GYM RETURN GRILLE
R1	6X6	RETURN GRILLE		0.-105	0.050	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R2	8X8	RETURN GRILLE		106-260	0.073	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R3	10X10	RETURN GRILLE		261-355	0.054	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R4	12X12	RETURN GRILLE		356-530	0.054	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R5	14X14	RETURN GRILLE		531-735	0.054	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R6	16X16	RETURN GRILLE		736-810	0.054	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R7	20X20	RETURN GRILLE		811-1285	0.054	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R8	22X22	RETURN GRILLE		1286-1570	0.054	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R9	24X24	RETURN GRILLE		1600	0.054	20	PRICE EGG CRATE RETURN/EXHAUST GRILLE
R10	34X14	RETURN GRILLE		1500	0.069	20	PRICE 500 SERIES RETURN/EXHAUST GRILLE

1. PROVIDE BORDER FOR LAY-IN OR SURFACE MOUNT AS REQUIRED.
2. DUCT RUNOUTS SHALL BE AS INDICATED ON PLAN.
3. AIR PATTERN INDICATED ON PLAN.

DIFFUSER LEGEND: TAG — CFM — PATTERN: 1-WAY, 2-WAY, 3-WAY, 4-WAY

LEGEND: TAG — CFM — NO PATTERN ON RETURN GRILLES; NO PATTERN ON SIDEWALL GRILLES

4. PROVIDE MFGR'S SQUARE TO ROUND TRANSITION FOR DIFFUSERS, FLEX DUCT SHALL NOT EXCEED 5'. PROVIDE 2" PLENUM & DUCT CONNECTION BEHIND RETURNS UNLESS OTHERWISE NOTED.
5. PROVIDE AIR VOLUME DAMPERS FOR EACH SUPPLY, AS REQUIRED.

CONDENSING UNIT FOR AHU-4

TAG	LOCATION	TOTAL CAPACITY (MBH)	MANUFACTURER & MODEL	ELECTRICAL CONDENSING UNIT VOLTS/ø	MCA	MOCP	REFRIGERANT LINES QNTY	LIQ (IN)	SUC (IN)
ACU-4	ATTIC ROOF	72.0	LENOX/TSA072S4S- 6 TONS	208/3	27	45	1	5/8	1-1/8

PROVIDE WITH VIBRATION ISOLATION ROOF CURBS BY VIBROACCOUSTICS OR EQUIVALENT.

MAKE UP AIR UNIT FOR KITCHEN

TAG	AREA SERVED	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	ESP (IN.WG)	TSP (IN.WG)	ELECTRICAL VOLTS/ø	MCA	MOP	HP	HEATING (Rated for Propane) INPUT (MBH)	OUTPUT (MBH)	LAT (°F)	MANUFACTURER & MODEL
MAU-1	KITCHEN	2425	2425	1.5	1.8	208/3	10.8	15	1-1/2	250	200	76.4	GREENHECK IGX-110-H12

1. FURNISH WITH STAINLESS STEEL HEAT EXCHANGER.
2. SINGLE POINT CONNECTION. MANUFACTURER SHALL PROVIDE INTERNAL MOTOR CENTER WITH DISCONNECT SWITCH AND MOTOR STARTERS FOR SUPPLY FAN AND KITCHEN EXHAUST FAN. INTERCONNECTING WIRE FROM INTERNAL CONTROL CENTER TO KITCHEN EXHAUST FANS KEF-1,KEF-2,CEF-1 SHALL BE BY ELECTRICAL CONTRACTOR. COORDINATE REQUIREMENTS.
3. HORIZONTAL UNIT – WEATHERHOOD WITH 2" ALUMINUM MESH FILTER, DOWNBLAST DISCHARGE POSITION
4. PROVIDE HINGED ACCESS DOORS FOR EASY ACCESS TO BLOWERS,FILTERS AND FURNACE SECTIONS.
5. PROVIDE PREMIUM EFFICIENCY MOTOR TO COMPLY WITH APPLICABLE UTILITY REBATE PROGRAM
6. PROVIDE VIBRATION ISOLATION ROOF CURB BY 'VIBROACCOUSTICS' OR EQUIVALENT.
7. CONTROLLERS, SENSORS AND OTHER CONTROL COMPONENTS TO PERFORM THE REQUIRED SEQUENCE OF OPERATIONS SHALL BE FURNISHED BY CONTROLS CONTRACTOR AND FACTORY INSTALLED. UNIT MOUNTED COMPONENTS, SENSORS AND CONTROLLERS SHALL BE SHIPPED TO THE FACTORY FOR FACTORY INSTALLATION.

DUCTLESS SPLIT SYSTEM AIR CONDITIONING

TAG	AREA SERVED	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EAT (DB/WB)	AMBIENT AIR TEMP (°F)	ELECTRICAL CONDENSING UNIT VOLTS/ø	MCA	MFA	FAN COIL UNIT VOLTS/ø	MCA	MOCP	REFRIGERANT LINES QNTY	LIQ (IN)	SUC (IN)	MIN SEER	MANUFACTURER & MODEL (CONDENSING UNIT/FAN COIL UNIT)	FAN COIL UNIT QUANTITY & TYPE	NOTES
AC-1/ ACU-1	OT/PT	12.0	8.24	80/67	95	208/1	7	15	208/1	–	–	1	1/4	3/8	18.0	DAIKIN RKN12KEVJU/FTXN12KVJU	1 WALL MOUNTED	
AC-2/ ACU-2	EQUIP. RM.	12.0	8.24	80/67	95	208/1	7	15	208/1	–	–	1	1/4	3/8	18.0	DAIKIN RKN12KEVJU/FTXN12KVJU	1 WALL MOUNTED	
AC-3/ ACU-3	TELE/ DATA RM.	12.0	8.24	80/67	95	208/1	7	15	208/1	–	–	1	1/4	3/8	18.0	DAIKIN RKN12KEVJU/FTXN12KVJU	1 WALL MOUNTED	

1. FURNISH WITH ALL REQUIRED CONTROLS AND WIND BAFFLE FOR LOW AMBIENT OPERATION DOWN TO 0'F OUTSIDE AIR TEMP.
2. FAN COIL UNIT MOTORS SHALL HAVE INTERNAL THERMAL OVERLOAD PROTECTION.
3. VERIFY UNIT SIZES BASED ON ACTUAL LAYOUT.REFER TO MANUFACTURER'S RECOMMENDATIONS.

SUPPLY/RELIEF/EXHAUST FAN SCHEDULE

BASED ON GREENHECK

TAG	AREA SERVED	TYPE	CFM	STATIC PRESS (IN. WG.)	FAN RPM	ELECTRICAL VOLTS/ø	HP	FLA	MOTOR RPM	MODEL	COMMENTS
EF-1,2	KINDERGARTEN TLT C118 & TLT C119	IN-LINE	75	0.50	1725	115/1	1/6	3.1	1750	SQ-65-VG	1,2,3
EF-3,4,4A 4B	TLT C124 , TLT C123 TLT. C127 & TLT 128	IN-LINE	75	0.50	1725	115/1	1/6	3.1	1750	SQ-65-VG	1,2,3
EF-5,6	STAFF TOILET C114 & C115	IN-LINE	75	0.50	1725	115/1	1/6	3.1	1750	SQ-65-VG	1,2,3
EF-7	BOYS TLT C113 & GIRLS TLT. C112	IN-LINE	450	0.50	1306	115/1	1/4	5.8	1725	BSQ-90	1,2,3
EF-9	TLT C109	IN-LINE	75	0.5	1725	115/1	1/6	3.1	1750	SQ-65-VG	1,2,3
EF-10,11	GIRLS TOILET B120 / BOYS TLT B117	ROOF	225	0.50	1105	115/1	1/6	3.1	1725	GB-081	4
EF-12,13	GIRLS LOCKER B 121 & BOYS LOCKER B115	ROOF	200	0.50	806	115/1	1/6	3.1	1725	GB-081	4
EF-14	OT/PT TLT A127	ROOF	75	0.50	1725	115/1	1/6	3.1	1750	G-060-VG	4
EF-15	KITCHEN STORAGE B108	CEILING	50	0.25	1725	115/1	1/15	3.4	1750	SP-B-70	6
EF-16	TLT B126 & JAN CLOSET B127	ROOF	150	0.50	1725	115/1	1/6	3.1	1750	G-065-VG	4
EF-17	JAN CLOSET A107,TLT A108, A111	ROOF	225	0.50	1105	115/1	1/6	3.1	1750	GB-081	4
EF-18,19	GIRLS TOILET A112, BOYS TLT A109	ROOF	150	0.50	1725	115/1	1/6	3.1	1750	G-065-VG	4
EF-20	ART STORAGE	ROOF	60	0.25	1725	115/1	1/6	3.1	1750	G-060-VG	4
EF-21	KILN HOOD WITH EXHAUST FAN	ROOF	250	–	1725	115/1	1/20	1.7	1550	VENT-O-KILN HOOD WITH FAN 1437-SWB (NP)	10
EF-22	SCIENCE STORAGE A125	ROOF	150	0.25	1297	115/1	1/6	3.1	1725	CUE-070-VG	4
CHF	CONDENSATE HOOD FAN -KITCHEN	ROOF	400	0.75	1578	115/1	1/2	6.1	2500	CUE-101HP-VG	4,9,8
KEF-1	KITCHEN HOOD EXHAUST FAN1	ROOF	1400	1.0	1620	115/1	1/2	6.2	1725	CUE-121-VG	5,7,8
KEF-2	KITCHEN HOOD EXHAUST FAN2	ROOF	1150	1.0	1275	115/1	3/4	10.1	1550	CUE-141-VG	5,7,8
EF-23	WELL HOUSE EXHAUST FAN	INLINE	3000	0.375	1175	115/1	1	12	1300	SQ-160-VG	1,2,3

REMARKS:

1. SUSPEND FROM STRUCTURE. PROVIDE WITH VIBRATION ISOLATION AND SEISMICALLY SUPPORT.
2. PROVIDE INLINE FANS WITH: DISCONNECT SWITCH, BACK DRAFT DAMPER, FAN HOUSING WITH 0.5 INCH THICK INSULATION, SOLID STATE SPEED CONTROLLER, FACTORY BAKED ENAMEL COATING
3. FURNISH MOTOR WITH INTERNAL THERMAL OVERLOAD PROTECTION.
4. PROVIDE ROOF EXHAUST FAN WITH: DISCONNECT SWITCH, MOTORIZED DAMPER, VIBRATION ISOLATED ROOF CURB, FACTORY BAKED ENAMEL COATING. SEISMICALLY SUPPORT. ROOF CURB AND FAN SHALL MATCH COLOR OF ROOF.
5. PROVIDE UL 762 LISTED GREASE EXHAUST FANS, ALUMINUM HOUSING, BACKWARD IINCLINED ALUMINUM WHEEL. PROVIDE WITH: DISCONNECT SWITCH, STARTER WITH THERMAL OVERLOAD, HIGH EFFICIENCY MOTOR, F EXTENDED LUBE LINES, 1" DRAIN CONNECTION, VIBRATION ISOLATED HINGED ROOF CURB WITH CABLES AND VENTED CURB EXTENSION, HEAT BAFFLE AND CURB SEAL.
6. PROVIDE CEILING FANS WITH: DISCONNECT SWITCH, ALUMINUM INTAKE GRILLE, VIBRATION ISOLATION, BACKDRAFT DAMPER, SOLID STATE SPEED CONTROLLER. ROOF CAP WITH GSR MODEL.
7. INTERLOCK WIRING WITH KITCHEN HOOD HEAT SENSOR BY DIV. 26. REFER TO KITCHEN PLAN, FS-H2 FOR WIRING DETAILS.
8. REFER TO KITCHEN CONSULTANT'S PLAN
9. WITH DRAIN CONNECTION
10. INTERLOCK WITH KILN

Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
Crystal Lake Elementary School
284 Sandy Beach Road
Ellington, Connecticut 06029

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
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--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
MECHANICAL SCHEDULES
State Project Number: 048-0058 EA/RR/PS

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Project Number: 12.140
Drawing Number: M401

INTEGRAL VIBRATION ISOLATION/NOISE CONTROL CURB & SILENCER

SYMBOL	CFM	SUPPLY SILENCER P.D IN WG.	RETURN SILENCER P.D IN WG.	CURB HEIGHT,in	MANUFACTURER	MODEL	NC LEVEL REQUIRED	MIN. DEFLECTION in	RETURN SILENCER P.D IN WG.
RTU-1	6000	0.04	0.06		VIBRO ACCOUSTIC	RED-UNV-84" RED-UNV-66"	28		
RTU-2	6000	0.15	0.09	30	VIBRO ACCOUSTICS	NC-VCR	28	3	
RTU-4	2450	0.15	0.06		VIBRO ACCOUSTICS	RED-MV-60" RED-UNV-60"	28		
RTU-5	2300	0.3	0.16	30	VIBRO ACCOUSTICS	NC-VCR	40	2	
RTU-6	3300	0.09	0.9	26	VIBRO ACCOUSTICS	NC-VCR	40	2	
RTU-7	3200	0.15	0.09	26	VIBRO ACCOUSTICS	NC-VCR	40	2	
RTU-8	2500	0.14	0.19	26	VIBRO ACCOUSTICS	NC-VCR	35	2	
RTU-9	2500	0.15	0.2	26	VIBRO ACCOUSTICS	NC-VCR	40	2	
RTU-10	500	0.12	N/A	30	VIBRO ACCOUSTICS	RED-MLV-60"	28		
RTU-11	1600	0.11	N/A	26	VIBRO ACCOUSTICS	NC-VCR	40	2	

NOTES:

1. Basis of design: Vibro-Acoustics
2. Provide elastomeric flexible piping connectors for all piping connections to RTU.
3. Curb mounted rooftop units shall be mounted on Vibro-Acoustics type VCR roof top spring isolation and sound control curb consisting of galvanized curb sections with integral vertical and laterally restrained isolators formed to fit the contractor supplied rooftop equipment. The spring isolation curb and acoustical treatment package shall provide a space and adjacent space noise criteria (NC) as scheduled.
   a. Submit acoustical calculations to demonstrate resultant ductborne noise levels in the occupied spaces meet scheduled NC level.
   b. Submit acoustical calculations to demonstrate resultant duct breakout noise levels in the occupied spaces meet scheduled NC level.
   c. Submit analysis to demonstrate that noise transmission through the roof will not exceed scheduled NC level.
   d. Submit analysis to demonstrate that vibration transmission through the building structure will not contribute to levels in excess of scheduled NC level.
   e. Submit calculations and PE stamp to demonstrate that code requirements have been met for seismic restraint design.
   f. Submit calculations and PE stamp to demonstrate that code requirements have been met for wind restraint design.
   g. Submit calculation to demonstrate that installed pressure drop will be no greater than scheduled values for supply and return air paths.
4. Submit written guarantee that space noise level due to ductborne, breakout, vibration and noise transmission through roof will not exceed specified levels. If the noise level in the occupied spaces exceeds the specified noise criteria (NC) level, it will be the financial responsibility of the noise control curb manufacturer to provide product and labor to achieve the specified criteria. Additional noise control required as a result of the purchase of noisier air handling units will be the financial responsibility of the purchasing contractor. The contribution of other noise sources, including but not limited to dampers, duct regenerated noise, and diffusers is excluded from this guarantee. The total noise contribution from sources other than the RTU's must be at least 5 dB below the specified noise criteria.
5. Submit FEA analysis to demonstrate that structural integrity of the system meets seismic and wind loading design requirements.

COMBUSTION AIR FAN					
TAG	MFG/MODEL	CFM	SP (IN WG)	V/ø	HP
BSF-1	GREENHECK SQ-120	1100	0.125"	115/1	1/6

PROVIDE WITH BACKDRAFT DAMPER, VIBRATION ISOLATION, ECM MOTOR.

UNIT HEATERS						
TAG	MFG/MODEL	CAPACITY (MBH)	EWT/LWT ELEMENTS	FLOW (GPM)	V/ø	HP
UH-1	AIREDALE USA - MODEL WTC 18	18.0	180°F/140°F	1.0	115/1	1/60
UH-2	AIREDALE USA - MODEL WTC 193	193.0	180°F/140°F	10.0	115/1	1/3

PROVIDE WITH MOUNTING BRACKET.

CABINET UNIT HEATERS							
TAG	MFG/MODEL	CAPACITY (MBH)	CFM	EWT/LWT ELEMENTS	FLOW (GPM)	V/ø	HP
CUH-1	AIREDALE USA - MODEL FC/WCC12	118.3	1430	180°F/140°F	6.0	115/1	1/20 X 2

PROVIDE WITH TWO ROW HIGH CAPACITY HOT WATER COIL, ENERGY EFFICIENT MOTORS, DISCONNECT SWITCH, UNIT MOUNTED RETURN AIR THERMOSTAT, ACCESS DOORS, TAMPER PROOF HARDWARE AND KEY LOCKS, LEVELING LEGS.
PROVIDE WALL FRAME FOR RECESSING UNITS.

FINNED TUBE RADIATION							
TAG	MFG/MODEL	ELEMENT	ROWS OF ELEMENTS	CAPACITY (BTUH/LF)	FLOW (GPM/LF)	EWT/LWT ELEMENTS	ENCLOSURE HEIGHT
FT-1	AIREDALE USA - BARE ELEMENT	1"C-4-1/4"-42	1	1060	0.05	180°F/140°F	-
FT-2	AIREDALE USA - SLOPE TOP	1"C-4-1/4"-50	1	1490	0.10	180°F/140°F	12"

RECESSED CONVECTORS					
TAG	MFG/MODEL	CAPACITY (MBH)	LENGTH	EWT/LWT ELEMENTS	FLOW (GPM)
CV-1	AIREDALE USA - MODEL PL-4-32	11.4	60"	180°F/140°F	0.6

PROVIDE WITH ACCESS DOORS.

HEATING SYSTEM BASED OFF OF 30% GLYCOL. SIZE EQUIPMENT ACCORDINGLY.

CONTROLS CONTRACTOR TO PROVIDE VFDS FOR ALL MECHANICAL EQUIPMENT.

EQUIPMENT SCHEDULE

B-1,2,3 VIESSMANN MODEL CM2-246

INPUT: 878 MBH OUTPUT: 827 MBH
COMBUSTION EFFICIENCY: 97.7%
FLOW RATE: 43 GPM AT EWT/LWT: 180°F/140°F

BURNER: PROVIDED WITH BOILER RATED FOR LIQUID PROPANE.
FULLY MODULATING
ELECTRICAL: 120V/1ø, 900 WATTS

PROVIDE WITH VITOCONTROL-S DIGITAL RESET BOILER AND HEATING SYSTEM CASCADE CONTROL VITOTRONIC GC1 BOILER CONTROLS, LON COMMUNICATION MODULES, LON CONNECTING CABLES LON TERMINAL END RESISTOR, AIR INTAKE KITS, CM2-246, CM2 ELECTRICAL BOXES ACID NEUTRALIZATION KITS

WEIGHT: 2500 LBS

A/S-1 BELL AND GOSSETT
ROUAIRTROL R-4F
123 GPM

P-1,2,3 BELL AND GOSSETT PL-45
43 GPM AT 11 FT WG
115V/1ø, 1/6 HP

P-4,5 BELL AND GOSSETT SERIES 1510 BASE MOUNTED PUMP
MODEL 2 BC
126 GPM AT 62 FT WG
208V/3ø, 3 HP, 1750 RPM
PROVIDE WITH VFDS

ET-1,2 AMTROL EXTROL L SERIES
MODEL 600-L
TANK VOLUME: 159 GALLONS
MAX ACCEPTANCE: 159 GALLONS
1-1/2" SYSTEM CONNECTION
PROVIDE WITH SIGHT GLASS AND RESTRAINTS.

Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
Crystal Lake Elementary School
284 Sandy Beach Road
Ellington, Connecticut 06029

SILVER / PETRUCELLI + ASSOCIATES
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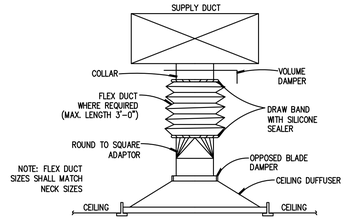
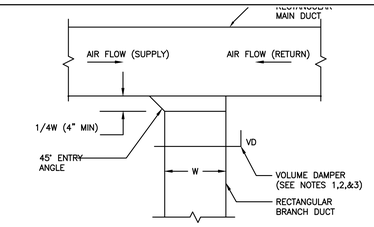


TYPICAL DIFFUSER CONNECTION

NOT TO SCALE

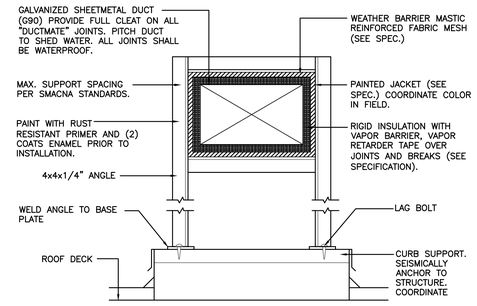


NOTES:

1. UP TO 1.5 SQ. FT. CROSS SECTIONAL AREA AND NOT EXCEEDING 24" IN WIDTH, USE SINGLE BLADE VOLUME DAMPER.
2. FOR CROSS SECTIONAL AREAS FROM 1.5 TO 3.0 SQ. FT. AND NOT EXCEEDING 24" IN WIDTH, USE 3 SINGLE BLADE VOLUME DAMPERS INDIVIDUALLY OPERATED TO FUNCTION IN AN OPPOSED MANNER.
3. FOR CROSS SECTIONAL AREAS GREATER THAN 3.0 SQ. FT. AND/OR EXCEEDING 24" IN WIDTH, USE GANG OPERATED OPPOSED BLADE VOLUME DAMPER AND FRAME ASSEMBLY.

TYPICAL RECTANGULAR SUPPLY/RETURN DUCT TAKEOFF

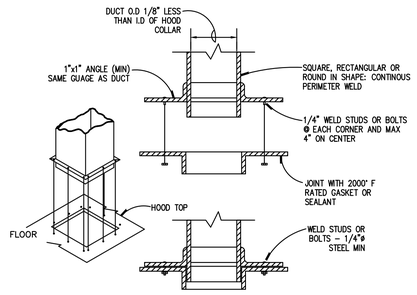
NOT TO SCALE



NOTE: ALL FASTENERS SHALL BE CADMIUM PLATED OR STAINLESS STEEL

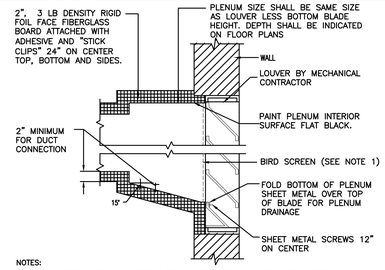
OUTDOOR RECTANGULAR DUCT INSULATION AND SUPPORT

NOT TO SCALE



DUCT ATTACHMENT TO GREASE HOOD

NOT TO SCALE

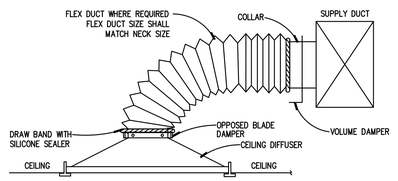


NOTES:

1. COVER INSIDE FACE OF LOUVER WITH 1/2" MESH ALUMINUM BIRD SCREEN SCREWED IN PLACE, IF NOT SUPPLIED WITH LOUVER.
2. INSULATE UNUSED PORTION OF LOUVER WITH 1 1/2" GLASS FIBER INSULATING BOARD.
3. SEAL ALL PLENUM SEAMS WATERTIGHT WITH SILICONE SEALANT.
4. TYPICAL FOR SUPPLY AND EXHAUST PLENUMS.

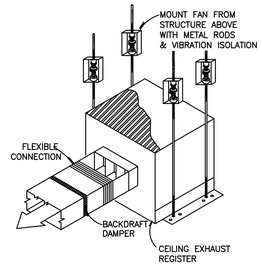
PROVIDE ACCESS DOOR IN PLENUM. DOOR SHALL BE FIELD COORDINATED FOR ACCESS. DOOR SIZE SHALL BE 36" HIGH x 18" WIDE. REFER TO SPEC FOR DOOR CONSTRUCTION.

INTAKE AND EXHAUST LOUVER INSTALLATION DETAIL



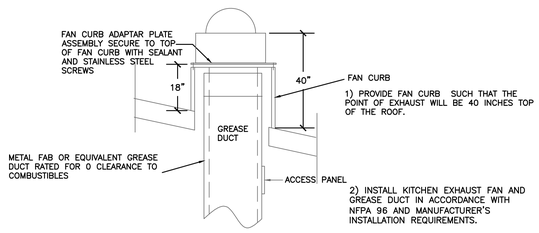
TYPICAL SIDE DIFFUSER CONNECTION

NOT TO SCALE



CEILING FAN

NOT TO SCALE



KITCHEN EXHAUST FAN INSTALLATION

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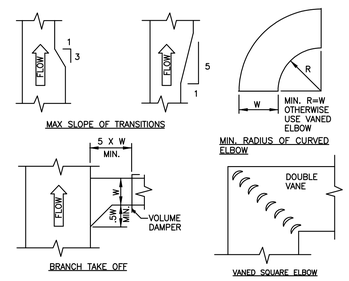
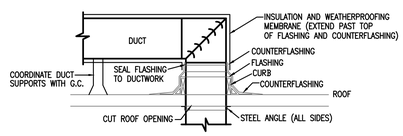


DUCT CONSTRUCTION DETAIL

NOT TO SCALE



ROOF DUCT PENETRATION DETAIL

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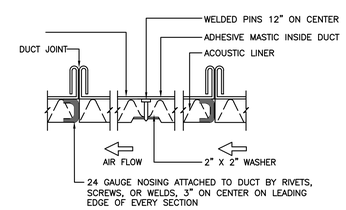
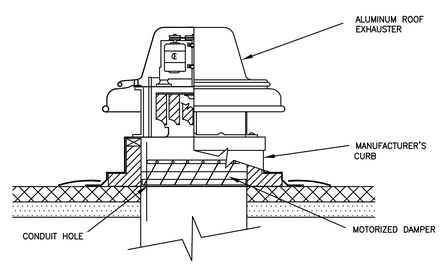


ACOUSTIC DUCT LINING

NOT TO SCALE



ROOF EXHAUST FAN DETAIL

NOT TO SCALE

Project Title:
Expansion and Renovate as New Project - PHASE 1 of 3
Crystal Lake Elementary School
284 Sandy Beach Road
Ellington, Connecticut 06029

SILVER / PETRUCELLI + ASSOCIATES
Architects / Engineers / Interior Designers
3190 Whitney Avenue, Hamden, CT 06518-2340
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silverpetrucelli.com

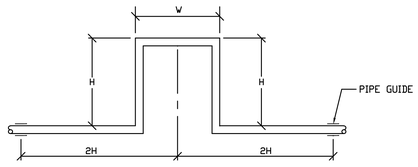
Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
MECHANICAL DETAILS

State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: NONE
Drawn By: VHS
Project Number: 12.140

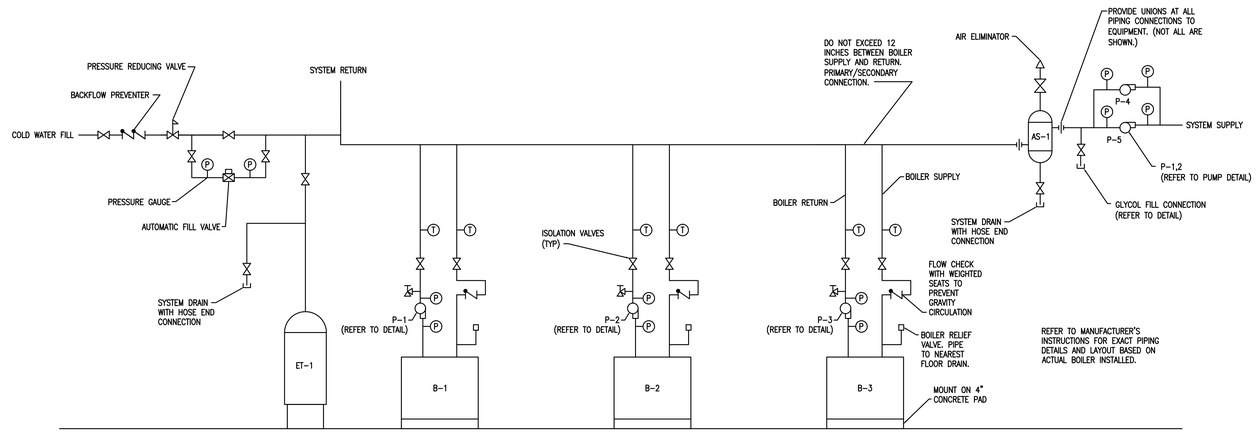
Drawing Number: **M501**



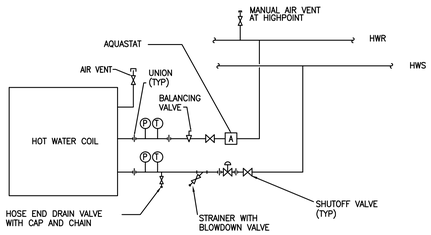
STEEL PIPE		
PIPE DIAMETER	H	W
3/4	6'-0"	3'-0"
1	6'-0"	3'-0"
1-1/2	8'-0"	4'-0"
2	8'-0"	4'-0"
3	10'-0"	5'-0"
4	12'-0"	6'-0"

COPPER PIPE		
PIPE DIAMETER	H	W
3/4	8'-0"	4'-0"
1	10'-0"	5'-0"
1-1/2	10'-0"	5'-0"
2	12'-0"	6'-0"
3	16'-0"	8'-0"
4	16'-0"	8'-0"

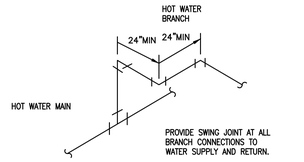
EXPANSION LOOP DETAIL
NOT TO SCALE



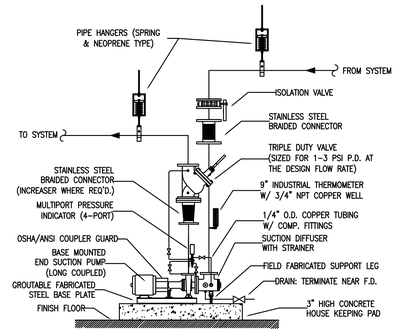
BOILER DETAIL
NOT TO SCALE



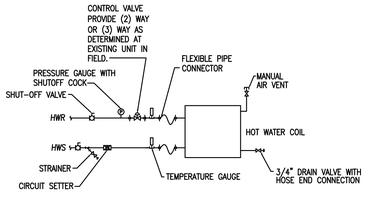
CABINET UNIT HEATER PIPING DETAIL
NOT TO SCALE



PIPING SWING JOINT DETAIL
NOT TO SCALE



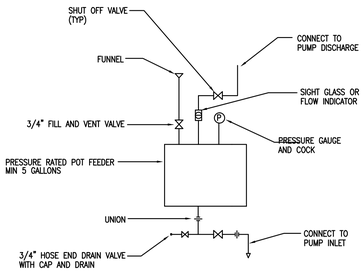
BASE MOUNTED PUMP
NOT TO SCALE



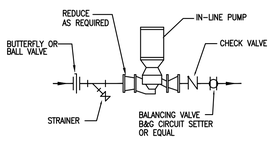
NOTE:
UNIONS MAY BE OMITTED AT CONTROL VALVE PROVIDED THAT VALVE HAS FLANGED CONNECTIONS.

PROVIDE FREEZESTAT FOR HOT WATER COIL.

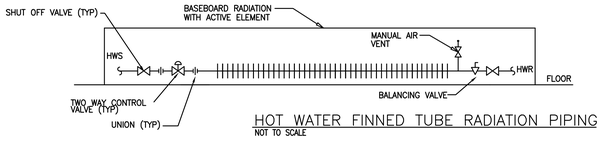
HOT WATER COIL DETAIL
NOT TO SCALE



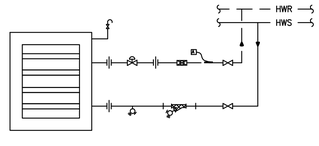
CHEMICAL POT FEEDER SYSTEM
NOT TO SCALE



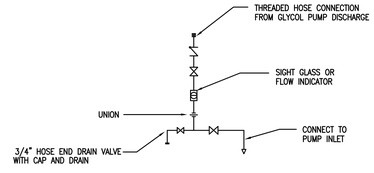
IN-LINE PUMP DETAIL
NOT TO SCALE



HOT WATER FINNED TUBE RADIATION PIPING
NOT TO SCALE



HOT WATER UNIT HEATER PIPING DETAIL
NOT TO SCALE



GLYCOL ADDITION CONNECTION
NOT TO SCALE

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Revision:	Description:	Date:	Revised By:
--	ISSUED FOR BIDDING	NOV. 26, 2013	--

Drawing Title:
HYDRONIC DETAILS
State Project Number: 048-0058 EA/RR/PS

Date: JUNE 18, 2013
Scale: AS NOTED
Drawn By: MJC
Project Number: 12.140
Drawing Number: M502

ABBREVIATIONS

(NOT ALL SYMBOLS ARE USED)

(###)	CFM	FA	FACE AREA	NO	NORMALLY OPEN
ABV	ABOVE	FBO	FURNISHED BY OTHERS	NTS	NOT TO SCALE
AC	AIR COMPRESSOR		INSTALLED BY HVAC SUBCONTRACTOR	OA	OUTSIDE AIR
ACU–#	AIR CONDITIONING UNIT	FC	FORWARD CURVE	OAT	OUTDOOR AIR TEMPERATURE
AD	ACCESS DOOR	FCU	FAN COIL UNIT	OAI	OUTDOOR AIR INTAKE
AF	AIRFOIL	FD	FIRE DAMPER WITH ACCESS DOOR	OBD	OPPOSED BLADE DAMPER
AFC	ADJUSTABLE FREQUENCY CONTROLLER	FF	FINAL FILTER	OD	OUTSIDE DIMENSION
AFF	ABOVE FINISHED FLOOR	FIBO	FURNISHED AND INSTALLED BY OTHERS	O.E. T.D.	OPEN END TRANSFER DUCT
AFMS	AIR FLOW MEASURING STATION	FIN FL	FINISH FLOOR	P–#	PUMP
AHU–#	AIR HANDLING UNIT	FL	FLOOR	PB	PUSH BUTTON
AL	ACOUSTIC LINING	FLA	FULL LOAD AMPERES	PBD	PARALLEL BLADE DAMPER
ALD	AUTOMATIC LOUVER DAMPER	FLEX	FLEXIBLE	PD	PRESSURE DROP
APD	AIR PRESSURE DROP	FPF	FINS PER FOOT	PF	PREFILTER
AUTO	AUTOMATIC	FPV	FAN POWERED VAV BOX	PH	PHASE
B–#	BOILER	FT	FEET	PHC	PREHEAT COIL
BC	BACKWARD CURVED	F.T.	FLOAT & THERMOSTATIC TRAP	PPH	POUND PER HOUR
BD	BELT DRIVE	FTR	FIN TUBE RADIATION	PRV	PRESSURE REDUCING VALVE
BMCS	BUILDING MANAGEMENT & CONTROL SYSTEM	FV	FACE VELOCITY	PSI	POUND PER SQUARE INCH
IBT	INVERTED BUCKET TRAP	GC	GENERAL CONTRACTOR	RA	RETURN AIR
BTU	BRITISH THERMAL UNIT	GIH	GRAVITY INTAKE HOOD	RAF–#	RETURN AIR FAN
C–#	CHILLER	GPH	GALLONS PER HOUR	RAT	RETURN AIR TEMPERATURE
CAP	CAPACITY	GPM	GALLONS PER MINUTE	REG	REGISTER
CB–#	CONTROL BOX	GWLS	GEOTHERMAL WATER LOOP SUPPLY	RH	RELATIVE HUMIDITY
CC–#	COOLING COIL	GWLR	GEOTHERMAL WATER LOOP RETURN	RHC	REHEAT COIL
CD	CEILING DIFFUSER	H/C	HEATING/COOLING	RM	ROOM
CFM	CUBIC FEET PER MINUTE	H–#	HUMIDIFIER	RP	RADIANT PANEL
CG	CEILING GRILLE	H–O–A	HAND–OFF–AUTOMATIC	RPM	REVOLUTIONS PER MINUTE
CLG	CEILING	HC–#	HEATING COIL	RS	RISE
CONV–#	HOT WATER CONVECTOR	hd	FEET OF HEAD	RTU–#	ROOFTOP AIR CONDITIONING UNIT
CP	CONDENSATE RECEIVER/PUMPING SYSTEM	HP	HORSEPOWER	SA	SUPPLY AIR
CR	CEILING REGISTER	HTG	HEATING	SAF–#	SUPPLY AIR FAN
CT–#	COOLING TOWER	HTR	HEATER	SAT	SUPPLY AIR TEMPERATURE
CTD	CEILING TRANSFER DUCT	HV–#	HEATING AND VENTILATING UNIT	SB	SECURITY BARS
CUH–#	CABINET UNIT HEATER HOT WATER	HVAC	HEATING, VENTILATING & AIR CONDITIONING	VSC	VERTICAL SPLIT CASE
CV	CONTROL VALVE			HSC	HORIZONTAL SPLIT CASE
CW	COLD WATER	HX–#	HEAT EXCHANGER CONVERTOR	SD	SMOKE DAMPER
D&T	DRIP AND TRAP	ID	INSIDE DIMENSION	SG	SUPPLY GRILLE
dB	DECIBELS	IN	INCHES	SP	STATIC PRESSURE
DB	DRY BULB	IV	INLET GUIDE VANES	SQ FT	SQUARE FOOT (AREA)
DD	DIRECT DRIVE	KW	KILOWATT	ST	SINGLE POLE SWITCH
DDC	DIRECT DIGITAL CONTROL	KWH	KILOWATT HOUR		W/THERMAL OVERLOAD
DIFF	DIFFUSER	LD	LINEAR DIFFUSER	SWR	SIDE WALL REGISTER
DL	DOOR LOUVER	LIN	LINEAR	T'STAT	THERMOSTAT
DN	DOWN	LRA	LOCKED ROTOR AMPERES	TD	TEMPERATURE DIFFERENCE
DOAS	DEDICATED OUTDOOR AIR SYSTEM	LPR	LOW PRESSURE RETURN	TEMP	TEMPERATURE
DP	DEWPOINT TEMPERATURE	LPS	LOW PRESSURE SUPPLY	TG	AIR TRANSFER GRILLE
DR	DROP	LVG	LEAVING	TOT	TOTAL
DTWS	DUAL TEMPERATURE WATER SUPPLY	LWT	LEAVING WATER TEMPERATURE	TN–HR	TON HOUR REFRIGERATION
DTWR	DUAL TEMPERATURE WATER RETURN	MAN	MANUAL	TRD	TRANSFER DUCT
DX	DIRECT EXPANSION	MAT	MIXED AIR TEMPERATURE	TT	THERMOSTATIC TRAP
EF–#	EXHAUST FAN	MAX	MAXIMUM	TYP	TYPICAL
EAT	ENTERING AIR TEMPERATURE	MBH	1000 BTU'S	UC	UNDERCUT DOOR
EER	ENERGY EFFICIENCY RATIO	MCA	MINIMUM CIRCUIT AMPACITY	UH–#	UNIT HEATER HOT WATER
EG	EXHAUST GRILLE	MD	MOTORIZED DAMPER	UV–#	UNIT VENTILATOR
EHC–#	ELECTRIC HEATING COIL	MER	MECHANICAL EQUIPMENT ROOM	VAV–#	VARIABLE AIR VOLUME
ENT	ENTERING	MEZZ	MEZZANINE	VD	VOLUME DAMPER
HEPA	HIGH EFFICIENCY PARTICULATE FILTER	MFS	MAXIMUM FUSE SIZE	VE	VOLUME EXTRACTOR
ER	EXHAUST REGISTER	MIN	MINIMUM	VFD	VARIABLE FREQUENCY DRIVE
ES	END SUCTION	MOT	MOTOR	VI	VIBRATION ISOLATOR
ESP	EXTERNAL STATIC PRESSURE	MUA	MAKE–UP AIR	VSF	VARIABLE SPEED FAN SWITCH
ET–#	EXPANSION TANK	MV	MOTORIZED VALVE	W/	WITH
EUH–#	ELECTRIC UNIT HEATER	NC	NORMALLY CLOSED	WB	WET BULB
EWT	ENTERING WATER TEMPERATURE	NC	NOISE CRITERIA	WFM	WATER FLOW MEASURING STATION
EXT	EXTERNAL	NFA	NET FREE AREA	WMS	WIRE MESH SCREEN
EXH	EXHAUST	NIC	NOT IN THIS CONTRACT	WPD	WATER PRESSURE DROP
F	DEGREES FAHRENHEIT			WT	WEIGHT (LBS)
F&B	FACE & BYPASS DAMPER			ZD	ZONE DAMPER

SYMBOL LEGEND

(NOT ALL SYMBOLS ARE USED)

	PRESSURE/TEMPERATURE PORT		PIPE UNION		MECHANICAL NOTE REFERENCE, NUMBER INDICATES NOTE
T	TEMPERATURE GAUGE/ TEMPERATURE INDICATOR	AV	AIR VENT, AUTOMATIC	C_F	CUBIC FEET PER MINUTE
	PRESSURE GAUGE		AIR VENT, MANUAL	1	DUCT STATIC PRESSURE
	BUTTERFLY VALVE	OR	PUMP OR FAN	VD	VOLUME DAMPER
	SHUT–OFF VALVE		STRAINER	BD	BACKDRAFT DAMPER
	ANGLE GATE VALVE		STRAINER, BLOW OFF	SPS	DUCT STATIC PRESSURE SENSOR
	GLOBE VALE			MD	MOTORIZED DAMPER
	ANGLE GLOBE VALVE		RETURN GRILLE		SUPPLY OR OUTSIDE AIR DUCT UP OR CSD
	TWO WAY MOTORIZED CONTROL VALVE	S	SPACE TEMPERATURE SENSOR		SUPPLY OR OUTSIDE AIR DUCT DOWN
	THREE WAY MOTORIZED CONTROL VALVE	P	PRESSURE SENSOR		RETURN OR EXHAUST DUCT UP OR CRG/CRR
	CHECK VALVE		DIRECTION OF FLOW		RETURN OR EXHAUST DUCT DOWN
	HOSE END DRAIN	M	METER	FC	FLEXIBLE CONNECTION
	OS & Y	DIA. OR ~	DIAMETER		RECTANGULAR TO ROUND TRANSITION
	SAFETY RELIEF VALVE (PRESS. & TEMP.)	OR	THERMOMETER		TRANSITION
	DRAIN VALVE W/ HOSE COUPLING W/CAP		PIPE TEE, OUTLET UP		DUCT WORK, DIRECTION OF FLOW
	CAP		PIPE ELBOW, TURNED UP		POSITIVE PRESSURE DUCT
	PIPE CONNECTION BOTTOM		PIPE TEE, OUTLET DOWN		NEGATIVE PRESSURE DUCT
	PIPE CONNECTION TOP	HWS	HOT WATER SUPPLY	R	CHANGE OF ELEVATION, RISE (R) DROP (D)
	PIPE COUPLING (JOINT)	HWR	HOT WATER RETURN		DOUBLE LINE LINED DUCT WORK
	ELBOW, 90°	CHWS	CHILLED WATER SUPPLY		SINGLE LINE LINED DUCT WORK
	PIPE ELBOW, TURNED DOWN	CHWR	CHILLED WATER RETURN		DIRECTION OF SUPPLY OR OUTSIDE AIR
	PIPE TEE		POINT OF CONNECTION		DIRECTION OF RETURN OR EXHAUST AIR
	CALIBRATED BALANCING VALVE		RETURN OR EXHAUST DUCT UP		AIR TERMINAL UNIT
H	HUMIDISTAT/HUMIDITY SENSOR		SUPPLY OR OUTSIDE AIR DUCT UP	S	SMOKE DETECTOR IN DUCT (FIBO)
H	DUCT MOUNTED HUMIDITY SENSOR	SD	SMOKE DAMPER	FD/AD	FIRE DAMPER W/ ACCESS DOOR
CO2	DUCT MOUNTED CARBON DIOXIDE SENSOR	FSD	COMBINATION FIRE AND SMOKE DAMPER		DUCT ACCESS DOOR
		GWLS	GEOTHERMAL WATER LOOP SUPPLY	DTWS	DUAL TEMPERATURE WATER SUPPLY
		GLWR	GEOTHERMAL WATER LOOP RETURN	DTWR	DUAL TEMPERATURE WATER RETURN

GENERAL

1. THE INTENT OF THESE CONTRACT DOCUMENTS IS FOR THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THESE MECHANICAL AND ELECTRICAL SYSTEMS INCLUDE PLUMBING, FIRE PROTECTION, HVAC, ELECTRICAL AND ALL ASSOCIATED SPECIAL SYSTEMS. ALL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS. OPERATING, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
2. THE CONTRACTOR SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS, INCLUDING PROJECT MANUAL, PLANS AND SPECIFICATIONS OF ALL TRADES BEFORE SUBMITTING BID. REFER TO SPECIFICATIONS, PROJECT MANUAL AND PLANS, INCLUDING ALL EQUIPMENT SCHEDULES FOR MECHANICAL AND ELECTRICAL INFORMATION. CONTRACTOR SHALL WALK THROUGH BUILDING PRIOR TO SUBMITTING BID.
3. ALL OF THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO FORM A TOTAL DESIGN PACKAGE. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER TO DETERMINE WHICH TRADE CONTRACTOR IS RESPONSIBLE FOR VARIOUS PORTIONS OF THE WORK.
4. ALL WORK AND ACTION DEPICTED AND DESCRIBED SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
5. PROVIDE SUPPORT/BRACING OF EQUIPMENT AND BUILDING SERVICES FOR SEISMIC RESTRAINT AS REQUIRED BY CODE.
6. OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
7. ALL EQUIPMENT, MATERIALS AND RELATED SYSTEMS COMPONENTS SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.
8. REPAIR AND/OR REPLACE AT NO COST TO OWNER ALL EQUIPMENT AND MATERIALS DAMAGED DURING CONSTRUCTION.
9. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF EQUIPMENT WITH ALL TRADES BEFORE STARTING CONSTRUCTION. ANY MODIFICATIONS TO THE EQUIPMENT LAYOUT REQUIRED FOR INSTALLATION ARE TO BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF LIGHT FIXTURES AND MOUNTING HEIGHTS OF EQUIPMENT, INCLUSIVE OF RECEPTACLES, SWITCHES, THERMOSTATS, ETC. ALL SUCH EQUIPMENT AND COLORS SHALL BE COORDINATED WITH THE ARCHITECT. CONTACT ARCHITECT FOR CLARIFICATION OF MOUNTING REQUIREMENTS, IF INFORMATION IS NOT CONTAINED IN THE DRAWINGS.
11. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE APPLICABLE CODES IN THE ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION.
12. ALL EQUIPMENT SHALL BE LOCATED IN ACCESSIBLE LOCATIONS. WHEN A PIECE OF EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING OR WALL THEN THE APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. THESE SHALL BE COORDINATED WITH THE ARCHITECT.
13. WHEN CONFLICTS OCCUR BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR SHALL CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
14. CONTRACTORS SHALL COORDINATE THEIR WORK WITH ALL OWNER–FURNISHED EQUIPMENT, INCLUDING REQUIRED SERVICE CONNECTIONS, RECEPTACLES, ETC. BEFORE INSTALLTION.
15. CONTRACTORS SHALL PROVIDE ALL REQUIRED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING WALLS OR FLOOR SLABS WITH FIRE STOPPING SEALANT WHERE REQUIRED.
16. ELECTRICAL CONDUITS & BOXES TO BE CONCEALED IN WALLS OR ABOVE CEILING WHEREVER POSSIBLE.
17. COORDINATE ALL PIPING AND CONDUITS LEAVING THE BUILDING WITH THE SITE CONTRACTOR(S) BEFORE INSTALLATION.
18. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT.
19. PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS CONNECTED TO AND WITHIN 50 FEET OF ISOLATED EQUIPMENT THROUGHOUT MECHANICAL EQUIPMENT ROOMS.
20. LOCATE ALL TEMPERATURE, PRESSURE AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP/DOWN STREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
21. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS AND OTHER CONCEALED MECHANICAL EQUIPMENT.
22. ALL EQUIPMENT, PIPING, DUCT WORK SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
23. LOCATION AND SIZES OF ALL FLOOR, WALL AND ROOF PENETRATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
24. INSTALL COMPLETE OPERATING SYSTEMS. PROVIDE ALL COMPONENTS, DEVICES, CONTROLS, RELAYS, TRANSFORMERS, ETC., WHETHER INDICATED OR NOT, FOR COMPLETE SYSTEMS AS INTENDED BY THE CONSTRUCTION DOCUMENTS.
25. ALL NEW EQUIPMENT SPECIFIED IN THE SCHEDULES SHALL BE CONNECTED TO THE EXISTING BUILDING AUTOMATION SYSTEM.
26. SOME PART OF THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. REFER TO PHASING PLAN FOR MORE INFORMATION. MAINTAIN EXISTING SERVICES TO OCCUPIED AREAS. SEAL ALL DUCTWORK AND VENTILATION OPENINGS COMMUNICATING CONSTRUCTION AREAS WITH OCCUPIED AREAS TO PREVENT THE TRANSFER OF AIR CONTAMINATED BY CONSTRUCTION ACTIVITIES.
27. ALL PENETRATIONS THRU RATED WALLS, FLOORS & CEILINGS SHALL BE SEALED USING U.L. LISTED METHODS APPROPRIATE FOR INDICATED RATING

HVAC

1. PIPING AND DUCT WORK LAYOUTS AS INDICATED ON THE DRAWINGS ARE DIAGRAMATIC; PROVIDE ADDITIONAL TRANSITIONS AND OFFSETS AS REQUIRED FOR COORDINATION WITH BUILDING CONSTRUCTION AND THE WORK OF OTHER TRADES.
2. PROVIDE VOLUME DAMPERS, THROTTLING VALVES AND ISOLATION VALVES AS SPECIFIED AND AS INDICATED ON THE DRAWINGS.
3. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE RATED PARTITIONS.
4. PROVIDE SMOKE DETECTORS ON THE SUPPLY AND RETURN SIDE OF ALL AIR HANDLING EQUIPMENT 2000 CFM AND OVER.
5. ALL MOTORS AND EQUIPMENT SHALL BE OF EFFICIENCIES THAT ARE ELIGIBLE FOR UTILITY COMPANY ENERGY INCENTIVE PROGRAMS.
6. THE AUTOMATIC TEMPERATURE CONTROL SYSTEM SHALL BE COMPLETE IN ALL REGARDS, TESTED AND CAPABLE OF ACHIEVING THE SEQUENCES OF OPERATION. ALL DEVICES SHALL BE UNDER SYSTEM CONTROL. ALL ZONES SHALL BE THERMOSTATICALLY CONTROLLED WHETHER OR NOT A THERMOSTAT, SENSOR OR CONTROLLER IS INDICATED.
7. MAINTAIN MANUFACTURER'S RECOMMENDED MINIMUM CLEARANCES FOR INSTALLATION OF EQUIPMENT.
8. FLEX DUCT RUNS SHALL NOT BE LONGER THAN 5 FT.
9. PROVIDE VOLUME DAMPERS AT ALL SUPPLY DIFFUSERS, RETURN GRILLES, AND EXHAUST GRILLES.
10. PROVIDE VANDAL RESITANT COVERS THERMOSTATS, AS NOTED.
11. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
12. PROVIDE ALL 90 DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED. ELBOWS SHALL BE UNVANED SMOOTH RADIUS CONSTRUCTION WITH A RADIUS EQUAL TO 1–1/2 TIMES THE WIDTH OF THE DUCT. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.
13. COORDINATE DIFFUSER, REGISTER AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING AND OTHER CEILING ITEMS.
14. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS CONNECTED TO AIR HANDLING UNITS, FANS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
15. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
16. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, COILS AND OTHER ITEMS LOCATED IN DUCTWORK WHICH REQUIRE SERVICE OR INSPECTION.
17. PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL FANS, VALVES AND MECHANICAL EQUIPMENT.
18. SUPPLY AND RETURN DUCTS FROM THE MAIN AIR HANDLING UNIT SHALL HAVE ACOUSTICAL LINING, R VALUE OF 5, WITHIN 10' FT OF UNIT. METAL NOSINGS SHALL BE SECURELY INSTALLED OVER TRANSVERSELY ORIENTED LINER EDGES FACING THE AIR STREAM AT FAN DISCHARGE, AT ACCESS DOORS, AND AT ANY INTERVAL OF LINED DUCT PRECEEDED BY UNLINED DUCT METAL NOSING SHALL BE USED ON UPSTREAM EDGES OF LINER AT EVERY TRANSVERSE JOINT.
19. DUCTWORK SHALL BE PRESSURE TESTED AND SEALED FOR LEAKAGE.
20. THE SUPPLY AIR SYSTEM SHALL BE PURGED TO ENSURE ALL FOREIGN PARTICLES ARE REMOVED PRIOR TO FINAL CONNECTION OF SUPPLY AIR DIFFUSERS.
21. ALL ELBOWS AND TEES FROM DOWNFLOW ROOF MOUNTED UNITS SHALL BE WRAPPED WITH A SOUND LAGGING MATERIAL, IN ADDITION TO DUCT LINER.

PIPING

1. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION.
2. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
3. UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.
4. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
5. PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS AND OTHER EQUIPMENT WHICH REQUIRED VIBRATION ISOLATION, EXCEPT WATER COILS. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE.
6. ALL PENETRATIONS THRU RATED WALLS, FLOORS & CEILINGS SHALL BE SEALED USING U.L. LISTED METHODS APPROPRIATE FOR INDICATED RATING
7. PROVIDE SWING JOINTS AT ALL BRANCH CONNECTIONS TO WATER SUPPLY AND RETURN. PROVIDE ISOLATION VALVES AT ALL BRANCH CONNECTIONS..
8. PROVIDE AIR VENTS AT ALL HIGH POINTS.
9. INSTALL DRAIN VALVES WITH HOSE CONNECTION AT ALL LOW POINTS.
10. PROVIDE HOSE END CAPS WITH CHAIN ON ALL DRAIN VALVES.

HIGH PERFORMANCE BUILDING STANDARDS – GENERAL NOTES

DUCTWORK SHALL BE SEALED FROM OUTSIDE ELEMENTS DURING TRANSPORT AND STORAGE, AND INTERIOR SURFACES SHALL BE WIPED DOWN IMMEDIATELY PRIOR TO INSTALLATION. DURING INSTALLATION, OPEN ENDS OF DUCTWORK SHALL BE TEMPORARILY SEALED AND DUCTWORK SHALL BE PROTECTED WITH SURFACE WRAPPING. NO INSTALLED DUCTWORK SHALL CONTAIN INTERNAL POROUS INSULATION MATERIALS OR LINING.

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) EQUIPMENT SHALL BE COVERED AND PROTECTED FROM MOISTURE DURING TRANSPORTATION AND ONSITE STORAGE. FOR PERMANENTLY INSTALLED AIR HANDLERS USED DURING CONSTRUCTION, FILTRATION MEDIA IN AIR HANDLERS ARE SPECIFIED TO MEET THE MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF TEN, EXCEPT FOR UNIT VENTILATOR SYSTEMS WHICH SHALL HAVE A MINIMUM MERV OF SEVEN. ALL FILTRATION MEDIA SHALL BE REPLACED IMMEDIATELY PRIOR TO BUILDING OCCUPANCY WITH MEDIA HAVING A MERV RATING OF EQUAL OR GREATER VALUE TO EXISTING MEDIA.

MATERIALS THAT OFF–GAS TOXIC OR POTENTIALLY TOXIC FUMES SHALL BE PRECONDITIONED FOR AT LEAST SEVENTY–TWO HOURS PRIOR TO INSTALLATION WITHIN THE BUILDING. SUCH MATERIALS SHALL ALSO BE INSTALLED PRIOR TO THE INSTALLATION OF POROUS BUILDING MATERIALS TO REDUCE ABSORPTION AND ADSORPTION OF THOSE TOXINS BY THE POROUS MATERIALS. PRIOR TO INSTALLATION OF POROUS MATERIALS AND MATERIALS VULNERABLE TO MOLD, THE BUILDING ENCLOSURE SHALL BE WATERTIGHT.

WHENEVER ANY PORTION OF THE BUILDING IS OCCUPIED DURING CONSTRUCTION OR RENOVATION ACTIVITIES, THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMACNA) INDOOR AIR QUALITY GUIDELINES FOR OCCUPIED BUILDINGS UNDER CONSTRUCTION SHALL BE FOLLOWED.

CHLOROFLUOROCARBON (CFC)–BASED REFRIGERANTS SHALL NOT BE USED IN THE PROJECT.

MECHANICAL SYSTEMS FOR THE BUILDING ARE DESIGNED TO MEET THE MINIMUM VENTILATION REQUIREMENTS OF THE CURRENT ASHRAE STANDARD 62.1 USING THE VENTILATION RATE PROCEDURE. IF THE CURRENT CONNECTICUT STATE BUILDING CODE CONTAINS MORE STRINGENT REQUIREMENTS, IT SHALL BE USED TO MEET MINIMUM VENTILATION REQUIREMENTS.

ALL CLASSROOMS, INCLUDING ART ROOMS, MUSIC ROOMS, SCIENCE ROOMS, COMPUTER ROOMS, AND SPECIAL NEEDS, REMEDIAL AND LIBRARY SPACE SHALL MEET THE ACOUSTICAL STANDARDS AS REQUIRED UNDER SECTION 10–285G OF THE CONNECTICUT GENERAL STATUTES. ACOUSTICAL PANELS ARE PROVIDED IN THE MEDIA CENTER, CAFETERIA, AND MUSIC CLASSROOMS. ALL ROOMS CONTAIN ACOUSTICAL CEILING TILES OR ACOUSTICAL PANELS. DESIGN TO BE IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARD INSTITUTE: ACOUSTIC PERFORMANCE CRITERIA, ANSI S12.60–2002, DESIGN REQUIREMENTS AND GUIDELINES FOR SCHOOLS.

ARCHITECTURAL AND MECHANICAL DRAWINGS HAVE BEEN COORDINATED SO THAT OUTSIDE AIR INTAKES SHALL BE LOCATED A MINIMUM OF TWENTY–FIVE FEET FROM ANY HAZARD OR NOXIOUS CONTAMINANTS SUCH AS VENTS, CHIMNEYS, PLUMBING VENTS, EXHAUST FANS, COOLING TOWERS, STREET ALLEYS, PARKING LOTS, LOADING DOCKS, DUMPSTER AREAS, BUS LOOPS, OR ANY AREA WHERE VEHICLE IDLING OCCURS.

ONLY ELECTRONIC IGNITION SHALL BE PROVIDED FOR BOILERS.

Project Title:

Expansion and Renovate as New Project - PHASE 1 of 3

Crystal Lake Elementary School

284 Sandy Beach Road
Ellington, Connecticut 06029

SILVER / PETRUCELLI + ASSOCIATES
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